WHERE DO WE GO FROM HERE? THE ASPIRATIONS AND EXPECTATIONS OF THE GRADUATING CLASS IN A RURAL ISLAND HIGH SCHOOL: SCIENCE CURRICULUM, INFORMATION TECHNOLOGIES, PARENTAL, COMMUNITY, AND OTHER FACTORS OF INFLUENCE

CRAIG TUCKER

WHERE DO WE GO FROM HERE? THE ASPIRATIONS AND EXPECTATIONS OF THE GRADUATING CLASS IN A RURAL ISLAND HIGH SCHOOL: SCIENCE CURRICULUM, INFORMATION TECHNOLOGIES, PARENTAL, COMMUNITY, AND OTHER FACTORS OF INFLUENCE.

By

© Craig Tucker, B.Sc., B.Ed.

A thesis submitted to the School of Graduate Studies in partial fulfilment of the requirements for the degree of Master of Education

Faculty of Education

Memorial University of Newfoundland

April 1999

St. John's Newfoundland

Abstract

This research was carried out to gain an understanding of the educational and career aspirations and expectations of students in the graduating class from a rural school on a remote island off the coast of Newfoundland, Canada. A number of variables, affecting aspirations and expectations, were examined. These included: the number and type of science courses taken; the marks in these courses; the use of the internet and other information technologies to gain career information; parental occupation and level of education; student use of teachers and guidance counsellors as career resources; and the role of family in aiding students.

To measure the aspirational level of aspired-to careers, as well as expected careers, two scales were used. The General Educational Development Scale (GED) and the Specific Vocational Preparation Scale (SVP) are both subscales of the Canadian Classification and Dictionary of Occupations (CCDO). For career aspirations, relatively high levels of aspiration were found for both GED and SVP values. These values were lower for career expectations. Positive Spearman's rho correlations were found between GED and SVP levels for career aspirations and career expectations.

Significant Spearman's rho correlations were found between the GED and SVP levels for career aspirations and expectations, attainment in certain science courses, as well as attainment in academic science courses. A negative correlation was found for nonacademic courses.

Findings indicated that there were no other factors that had statistically significant

correlations with levels of career aspirations and expectations. However, a number of other trends were found in the data.

Recommendations based on these findings include ways by which rural students may be exposed to various non-local career options. They also include suggestions for improved guidance services in student career planning.

Acknowledgements

The author would like to thank numerous people without whose help this research paper would not have been possible. First, I would like to thank my supervisor, Dr. Ken Stevens for his valuable guidance and support during this research process. I would also like to thank Mr. Gerry White for his invaluable help in running the statistical analyses and for his constructive criticisms during the writing process. Many thanks go to the people who edited this document including Mr. Leo Mackay, Ms. Corina Hartely, and Mr. Doug Furey. Special mention goes out to Mr. Jonathon Butt for the use of his computer and printing facilities as well as his expertise in picture formatting and document scanning. Thanks to Mrs. Joanna Butt for her kindness in allowing me to intrude on her household. Thanks for all the coffee. Thanks to Mr. Nathan Bates for his expertise on provincial fisheries matters. Special thanks go to both my parents for all that they have done so that this thesis could be accomplished. Finally, a very special thanks to my wife Kelley Fewer for her editing skills, moral support and for allowing me to continue this work during the birth and medical concerns of our first child Nathan.

Table of Contents

List of Tables

Page

List of Figures

CHAPTER 1

INTRODUCTION

The purpose of this study were to examine the educational aspirations and expectations along with the career aspirations and expectations of students in the graduating class of a rural high school situated in an isolated Newfoundland Island area. Factors affecting aspirations and expectations were examined. The Island area lies off the east coast of North America. In order to gain an understanding of the situation affecting these graduates, it is important to describe the geographical, historical, economic, and social contexts of their lives.

Geographical Context

Newfoundland and Labrador, one of Canada's ten provinces, is located on the east coast of North America (see Figure 1.1).

Figure 1.1 North America

The province consists of two major regions, the island of Newfoundland and the mainland region called Labrador, which are part of continental North America. The island of Newfoundland is situated in the North Atlantic and lies between 44° and 52° North latitude and between 52° and 60° West longitude (see Figure 1.2).

Figure 1.2 Island of Newfoundland

The sample site called "the Island" lies off Newfoundland's northeast coast near the 50th parallel. Thus, it is an isolated island off an isolated island. The Island has an area of 182 km^2 with 10 small communities around the coast. Its coastline is barren and rocky with numerous small coves and inlets providing limited shelter from the strong winds and high seas that frequently batter the shores of the Island. The interior of the Island is a combination of rocky soil, mossy bog, and small, forested areas containing mainly coniferous trees such as balsam fir, black spruce, white spruce, and larch. The poor rocky soil and the

rough seas cause the environment to be harsh, and historically it has been a struggle to eke out a living from either.

In order to provide a context for the understanding of the aspirations and expectations of the young people from this isolated Island, a brief historical overview of European settlement and educational services will be given.

Historical Context

John Cabot was the first European to visit Newfoundland in 1497. At that time, it was noted that the waters around the island of Newfoundland were teeming with codfish. This discovery led to the vast European fishery that has occurred in Newfoundland waters ever since. During the 1500 and 1600's, settlement was discouraged and sometimes not allowed. Thus, only a summer fishery occurred. Ships left the European cities, in particular, Poole and Bristol in England and Waterford in Ireland, as well as ports in Spain, Portugal, and France to take part in this summer fishery. They arrived in Newfoundland in the spring and caught the codfish all summer long. Salting and drying it on wooden racks called flakes preserved the fish for transport back to Europe in the fall. Only a few landsmen were left behind to look after the small boats, stages (small wooden fishing sheds combined with wharves) and other small buildings during the winter, so that they would be ready for the returning fishing fleet the next spring.

Numerous disputes arose between England and France over land ownership as well as fishing rights during those early years in Newfoundland's history. Both countries claimed areas of the province, and set up armored garrisons to protect their citizens and territories. One of the first attempts by the British to lay official claim to Newfoundland was by an English admiral, Sir Humphrey Gilbert in 1583. He claimed Newfoundland in the name of Queen Elizabeth I in the presence of military and naval personnel, as well as fishing captains from the various European countries. This ceremony took place in the settlement of St. John's, now the provincial capital. This claim was often disputed over the next 200 years (Prowse, 1972).

In 1713 with the signing of the Treaty of Utrecht between France and England, England gained full ownership of Newfoundland but accorded France certain fishing privileges in designated coastal areas. Thus, Newfoundland became an official British possession. Settlement regulations were strictly initiated and controlled by Britain until 1832. Then Representative Government was established giving Newfoundlanders limited control over their own affairs, with many aspects of governance coming from Great Britain. In 1855 Newfoundland was given Responsible Government with almost total control over its own affairs (Prowse, 1972). This system continued until 1934 when Newfoundland became bankrupt and a Commission of Government was established with an English Governor, three Newfoundlander Commissioners and

three English Commissioners. Elections to public office were completely abolished. This system continued until Newfoundland entered into Confederation with Canada in 1949. Newfoundland had control of its fishery from 1855 to 1949. However. this ended when Canada was given control of the main fisheries operations such as setting fish quotas; the distribution of licenses for fishing in Canadian waters; enforcement of fishery regulations inside Canada's two hundred mile limit; and resource management strategies (Nathan Bates. pers. comm..1999).

The history of settlement on the Island is closely tied to the history of Newfoundland. Despite early restrictions by Britain. limited settlement began in the 1500's as more people sought employment in the Newfoundland fishery. and word of the possibilities for land and freedom from financial oppression spread. Many young men in England were entering the fishery as a means to escape the rule of the British landowners where employment opportunities were often as limited as that of serf farmers. Small fishing communities sprang up all over Newfoundland in various bays and coves. The first town on the Island was one such settlement. This first town had a good harbour and it was relatively near prime fishing grounds. The first record of permanent settlement was in 1697; however. records indicate that summer settlement occurred before this (Donahue. 1987).

Like many small communities around Newfoundland during this time. mainly West Country English fishermen and their families settled on the Island.

Each such community also had a merchant family who bought the fish from the fisherman in exchange for food and fishing supplies. The Slade family from Poole in England is the first recorded merchant family on the Island. They set up business in the mid 1700's and continued to operate into the late 1860's, when the business was taken over by the Earle family. Bartering and trade often left the fishermen indebted to the merchant from one year to the next. In many ways, it also provided a subsistence living. Bartering continued on the Island until 1967 when the Earle family closed down the business. After 1967, a Fishermen's Cooperative organized and ran the fish plants, buying and selling varieties of fish from the local fishermen (Donahue, 1987).

The history of education in Newfoundland began in the early days of settlement with the arrival of church missionaries from England and Ireland. Schools developed as services of the churches, which assumed responsibilities for educating members of their own denominations, with government grants assigned to those participating churches. Therefore, there was a system of church-controlled schools with limited government legislative control. By the time Newfoundland entered confederation with Canada, most of the other Canadian provinces had evolved to public school systems. But under section 93 of the British North America Act of 1867, protection was given to certain religious rights of Canadian schools. Newfoundland, as part of its Terms of Union with Canada, chose to continue to operate under a denominational school system. The

following churches operated their own denominational school systems at the time of confederation in 1949: Roman Catholic, Anglican, United Church, Presbyterian, Salvation Army, and Pentecostal. In 1969, all the existing churches which operated schools, except the Roman Catholic and the Pentecostal, chose to amalgamate educational services. This led to the Integrated school system in which the participating churches had equal responsibility for the operation of their schools. So, there remained three systems of education in Newfoundland, namely the Roman Catholic, the Pentecostal and the Integrated. This system continued to operate up until 1997 when Bill 17 was passed in the Canadian Parliament, at the request of the Government of Newfoundland and Labrador, that ended denominational control of the schools. At this time, changes were made to existing school boards reducing the number from 27 to 9.

It is interesting to note that on the Island, the three denominational school systems: Roman Catholic, Integrated, and Pentecostal had come together to form a single school system 25 years prior to provincial amalgamation. Up until 1973, each of the ten small communities had their own denominational schools. Thus, a typical community would have had both a Roman Catholic and an Integrated school. It was recognized that the cost of operating many small schools was not feasible hence the coming together of all the community high schools into one. For a time, each community continued to have denominational primary and elementary schools, but this, too, changed in 1987 with the construction of a

regional elementary school attached to the high school. At the time of this amalgamation, there was much dispute over the proposed site for the new high school. After many debates, it was decided to place the school in the center of the Island, a neutral site.

Aspirations and expectations of young people can not be examined in a vacuum. In order to understand these aspirations and expectations, it is necessary to have an understanding of the economic climate to which these students are exposed.

Economic Context

For most of Newfoundland's history, the cod fishery has been the focal point of the economy. In recent years, there have been drastic changes to the structure and operation of the cod fishery. In the late 1980's and early 1990's, scientists from the Federal Department of Fisheries and Oceans made note of the fact that the size of the cod stocks were dwindling and that care must be taken in the management of this resource. On July 2nd, 1992, in light of the continued decline of the cod populations, the Federal Government announced a two-year moratorium of the commercial fishing of codfish in most of the waters off the coast of Newfoundland. As a result of a further census of the cod fishery, which indicated a decline of the cod stocks, the moratorium was extended to five years and included all waters surrounding the island of Newfoundland and waters off

coastal Labrador. During this time, the only legal fishing of cod was as part of the census program known as the sentinel fishery.

The cod moratorium caused the loss of approximately 22,000 jobs both directly and indirectly related to the fishery. In an attempt to provide support for these displaced workers, the Federal Government initiated the Northern Cod Adjustment and Recovery Program (NCARP). In 1994, this program was replaced by the Atlantic Groundfish Strategy (TAGS). Both NCARP and TAGS were programs designed to offer financial assistance to displaced fishery workers and at the same time encourage these workers to seek retraining for positions, preferably outside the fishing industry. TAGS funding ended as of December 1998. The latest Government initiative involved the purchasing of cod licenses in an attempt to reduce the numbers of active cod fisherpeople who would be reentering the cod fishery should the cod stocks eventually rebound.

Social Context

Geographic isolation, historical reliance on the fishery, and the economic realities that each has created are some of the many factors that influence the lives of students on the Island.

One of the main challenges that students face during their schooling is the daunting task of making plans for their future. These include plans for post secondary education, plans for a specific career path, or plans to enter the work

force as soon as possible. For students in isolated, rural locations, there are many factors that make the planning or decision-making process more difficult. The reality of the situation for students enrolled in small, isolated, rural schools, as is the case on the Island, is quite complex.

Geographic isolation limits student access to educational opportunities. Library resources are limited, as is access to the internet. There is little opportunity to gain experience and exposure to educational activities off the Island, such as museum visits, access to cultural activities, exposure to the university as well as other post secondary institutions to name a few. Many students rarely leave the Island, and most that have done so do not travel far. Consequently, their views of the world, and the opportunities therein, are quite often narrow. In many instances, television is the only means of off-Island contact that these students receive, other than those experiences received from school activities.

Most families have relied on the various fisheries for many generations. Traditionally there have been two major fisheries for the people of the Island: cod and crab. The influence of the cod moratorium and the resultant move onto the NCARP and then the TAGS program, as a means of support for small inshore fisherpersons, has meant a lowered income and hardship for the majority of fisherpeople on the Island. A Few involved in the large boat crab fishery have managed to continue to make large sums of money as evidenced by the number of

new homes being built and vehicles being bought. Even now, many students believe that the crab fishery will be their means of support. This belief is supported by the fact that some students make a great deal of money in the summer crab fishery while others also make a living working in the fish plant, processing crab or other species throughout the year. This leads to a question of the perceived relevance of school in general, or certainly, the need for academic excellence among a certain sector of high school students.

Another concern with regard to living in an isolated rural setting is that there are very few career options available on the Island. Hence, students do not gain experience or exposure to the myriad of career options that are actually available to them off the Island. This is important, especially in light of the limited fisheries-related careers there will be in the future, because of the Federal Government's license buy-back initiatives.

Out-migration has always been a concern for this Island; however, it is happening at an ever-increasing pace. This leads to fewer post secondary graduates returning to find meaningful employment, a fact not missed by those still in the school system. A lack of young professional role models for students to follow, with careers to which students can aspire, may affect student educational and career aspirations.

For those students with plans to enter post secondary institutions, barriers such as increasing tuition, increasing entrance requirements, as well as increased

competition for the limited space in certain programs can affect the choices that students make regarding their future.

With the increase in entrance requirements as well as the increased competition for places in various post-secondary programs, a new phenomenon is emerging which may be a cause for concern. More and more level III (the final year of high school) students are returning to school for a further year in order to improve marks so as to meet new higher entrance requirements for post-secondary institutions. This may be an indication that students are affected by the above changes.

Statement of Problem

The processes by which high school students develop goals for their futures, both short-term i.e. entering post secondary education, or entering the work force; and long-term, i.e. aspirations for a particular career, are among the most important that the students will make during their lifetimes. Thus, it is important to try to develop a picture of those aspirations as well as an understanding of those factors which may influence the paths that students take in arriving at their educational and/or career goals.

Student aspirations and the transition from school to work have been widely studied and discussed in the literature, however, there has been relatively little work done with respect to rural settings, in particular, rural Newfoundland.

There have been a few exceptions, such as: the *Youth Transition into the Labour Market* study prepared by Sharpe and Spain (1991a, 1991b); *Educational Pathways and Experiences of Newfoundland Youth* report by Sharpe and White (1993); and *Initial Transition From High School, Decisions and Aspirations of Rural Newfoundland and Labrador Youth* masters thesis by Emma Genge (1996). The Sharpe and Spain studies were initially carried out in 1989 with follow-up studies in the winter of 1990-91 carried out by Sharpe and White. Since this longitudinal study is now almost ten years old, it seems timely that some of these factors be readdressed in light of the differing economic climates from the past to the present. The masters thesis carried out by Genge examined the "students' perspective on the degree to which they perceived these factors influencing their immediate career plans" (Genge, 1996).

The purpose of this research is to determine the educational plans, career aspirations and career expectations of level III students and to examine those realities which have affected the educational and career decisions of these students in the isolated school setting of the Island.

The Significance of the Study

The significance of this study is that it identifies and examines factors which affect student educational and career aspirations and expectations. An understanding of those factors will enable educational policy makers, school

administrators, and teachers to develop and implement curricula which will better serve students as they attempt to make plans for their future.

In trying to develop strategies to help young people arrive at valuable, realistic options for their future plans, either as they immediately enter the workforce, or as they enter and advance through post-secondary institutions, it becomes necessary for educators to gain an understanding of those factors which have significant impact on how these young people actually develop and arrive at their chosen career aspirations. According to Walberg (1989), "Aspirations are important because they guide what students learn in school, how they prepare for adult life, and what they eventually accomplish" (p. 1). This study examines a number of these factors as they occur specifically in an isolated rural setting. It supports findings that there are differences between youth in rural settings and youth in urban settings, in terms of their move from school to work; the social context in which this takes place; and the options that are available to each (Genge, 1996; Looker, 1993; Wilson, 1991).

Newfoundland, particularly rural areas, continues to have the highest unemployment rates in all of Canada. This is due, in part, to the continued cod moratorium affecting the ability of fisherpeople to return to their traditional careers. Federal Government license buy-back initiatives will decrease the numbers of people able to return to this traditional means of employment. Thus, in order for rural Newfoundland to deal with the high unemployment rates,

traditional dependence on the Employment Insurance and welfare systems, those entering the workforce in the future must have a different outlook in terms of career and educational aspirations than people did in the past. In order to attempt change, we must first understand those factors which determine aspirations so that educators at the school, board, and department levels can adjust curricula, guidance services, and the use of information technology to aid the rural students' decision-making process. "Educators can better plan their policies and practices if they understand current youth aspirations" (Walberg, 1989, p. 1).

Research Questions

The major research question is: *what are the educational, as well as the career expectations and aspirations of youth from geographically isolated rural island communities?* The subsidiary questions are organized to look at the factors, which affect students' career and educational aspirations. They include:

1) Curriculum:

   a) How does academic achievement in science relate to both career and educational expectations and aspirations?

   b) How do students make use of school-based resources to obtain career information, and is there a relationship between the use of this information and career/educational expectations and aspirations? (School-based

resources include: teachers, course offerings, guidance counselors, career fairs, etc.)

2) Family:

   a) What are the relationships between the parents' level of educational attainment and students' career/educational expectations and aspirations?

   b) What is the relationship between parental occupation and the career and/or educational aspirations of their children?

   c) What are the relationships between levels of parental or significant others' involvement and students' career/educational expectations and aspirations?

3) Media and Information Technology:

   a) How do media sources such as television, radio, printed material, and the internet play a role in students' career/educational expectations and aspirations?

   b) Do students have access to career and educational information, particularly through the media and information technology such as the internet?

4) Gender differences:

   a) Are there differences between males and females for the above-mentioned factors?

5) Youth in transition study:

   a) Are there differences between the results obtained from this current research study and those relevant aspects found in the 1989 *Youth Transition into the Labour Market* (YTLM) project?

CHAPTER 2

LITERATURE REVIEW

This chapter outlines research into those factors which affect student career and/or educational expectations and aspirations. Other terms have often been used concerning research on expectations and aspirations. Since these issues are related to the series of changes that adolescence or young adults go through as they leave school to enter post secondary education or enter the work force. the term transition has become recognized in the research. Other related terms. such as school-to-work transition or school-to-employment transition frequently occur as well (Doty. 1994: Hektner. 1995: Nichols. 1994: Owens. 1992: Powlette & Young. 1996: Way & Rossmann. 1996: West & Penkowsky. 1994). Other terms which relate to student career or educational aspirations include career choice. career development. vocational aspirations. occupational choices. and occupational aspirations (Cobb. McIntire. & Pratt. 1989: Conroy. 1997: Eccles. 1994: Plata. 1981: Walace-Broscious. Serafica. & Osipow. 1994). Thus. there is a wide array of literature on these related topics.

Other terms have often been used for careers. Terms such as work. employment. jobs. and occupations are found throughout the literature all referring to the same concept. namely that of one's lifework or profession (Conroy. 1997: Post. Williams. & Brubaker. 1996: Powlette & Young. 1996: Wilson & Fasko.

1992). For the purpose of this thesis the author uses many of these terms interchangeably.

Theories of Aspirations

Much of the research on student aspirations tends to focus on differences between aspirations and expectations. In order to understand some of this material, it is important to recognize the differences between aspirations and expectations. Quaglia (1989) emphasized the fact that aspirations are multidimensional and "cannot be simply defined as individual dreams or ambitions" (p. 7). He noted that various aspects must be taken into account: these include "educational, vocational, and quality of life issues" (p. 7). Quaglia and Cobb (1996) made note of the fact that while the term "student aspirations" is often used in education, "there is little understanding and agreement as to what it means and even less understanding about its origin" (p. 127). In their paper, they traced the history of the term in order to develop a comprehensive meaning. Using concepts from achievement motivation theory and social comparison theory they defined aspirations as "a student's ability to identify and set goals for the future, while being inspired in the present to work toward those goals" (p. 130). Cobb, McIntire, and Pratt (1989) described aspirations as those things that "drive individuals to do more and be more than they presently are" (p. 12). They also made note of the distinctions between, and interdependence upon, the various types of aspirations, namely "educational and career aspirations" as opposed to

"quality of life aspirations." They described the former as relating to the assigned value of formal education and intended level sought, along with the career intended. The latter referred to such things as preferred area of residence, family preferences, school preferences for children, etc. (Cobb et al., 1989, p.12). P.S. MacBrayne (1987) stated that "aspirations are defined as an individual's desire to obtain a status object or goal such as a particular occupation or level of education" (p. 135). This is in contrast to expectations which are "an individual's estimation of the likelihood of attaining those goals, plans, ambitions or dreams" (p.135). MacBrayne (1987) credited the conceptualization of the terms to Kuvlesky and Bealer (1966) in their research on how occupational choices are measures of an individual's aspirations or preferences concerning work status. Gottfredson (1996) described occupational aspirations as "shifting and fallible indicators of the center of a set or array of occupations that the individual is willing or eager to consider" (p. 187).

The basis for much of this research was the assumption that both aspirations and expectations were related to actual career attainment. If this is the case, then with a greater understanding of aspirations and expectations, programs may be put in place to allow individuals to have higher aspirations and expectations.

Much has been written in the literature about theories of aspirations and career decision-making (Brown & Brooks, 1996; Conroy, 1997; Gottfredson,

1996; Holland, 1992; Kotrlik & Harrison, 1989; Luzzo, 1996; Mitchell & Krumboltz, 1996; Powlette & Young, 1996; Quaglia & Cobb, 1996; Spokane, 1996; Super, 1953; Super, Savikas & Super, 1996). In order to understand educational and career aspirations and expectations, it is important to have a theoretical framework from which to approach the various research questions found in the literature. While there are a myriad of career development theories to choose from, the theorists for this discussion have been chosen because they have been prevalent in the research.

One of the most frequently cited authors in career development research, Super (1953) believed that personal and environmental factors interact in such a way as to favour the development of career aspirations. These various career aspirations developed for different individuals because of differing abilities, interests and personalities and that career decisions can change as a result of differing life situations. He developed a series of ten propositions which constituted his theory of career development (Super, 1953). In a later article Super, Savikas, & Super (1996) mentioned his early theory "that emphasizes continuity in human development and focuses on the progression of choice, entry, adjustment, and transition to new choice over the entire life cycle" (p. 123). According to Bailey and Stadt (1973), as cited in Kotrlik and Harrison (1989), Super's theory was considered to be the most comprehensive of the developmental theories (p. 49). Throughout the years his original ten propositions have been

refined and expanded. Currently, there were fourteen propositions which made up his theory (Super et al., 1996). These propositions dealt with a number of aspects such as recognizing that there were differences between individuals which qualified them for various careers and that different occupations required specific sets of traits and abilities while at the same time allowing for these individual differences. Job preference, life situations, and self-concept change over time although the latter tends to become more stable as maturity levels increase. When referring to this change over time, Super et al. (1996) discussed a series of "life stages characterized as a sequence of Growth, Exploration, Establishment, Maintenance, and Disengagement, and these stages in turn may be subdivided into periods characterized by developmental tasks" (p. 124). Further propositions included: the nature of the career pattern depending on factors such as parents' socioeconomic status; maturity levels of the individual; educational level attained; personality traits; and opportunities to which the individual is exposed. Success in a career depends on coping skills, which is related to career maturity. They continue:

> Career maturity is a psychosocial construct that denotes an individual's degree of vocational development along the continuum of life stages and substages from Growth through Disengagement. From a social or societal perspective (it) can be defined by comparing the developmental tasks being encountered to those expected based on an individual's chronological age. From a psychological perspective (it) can be operationally defined by comparing an individual's resources, both cognitive and affective, for coping with a

> current task to the resources needed to master the task. (Super et al., 1996, p. 124 -125)

Super's et al. (1996) propositions also mentioned how development through these life stages may be directed via the use of facilitation and the maturation of coping skills, interest and abilities, as well as fostering the development of self-concepts (p. 125). These "occupational self-concepts" are produced by the interactions of "inherited aptitudes, physical makeup, opportunity to observe and play various roles, and evaluations of the extent to which the results of role-playing meet with the approval of supervisors and peers" (Super et al, 1996, p. 125). Work and life satisfaction are linked to self concepts which are dependant on the individual's ability to find outlets for "abilities, needs, values, interests, (and) personality traits" (Super at al., 1996, p. 125). Careers allow individuals to focus and organize their personalities. "Social traditions, such as sex-role stereotyping and modeling, racial and ethnic biases, . . . (and) individual differences are important determinants of preferences for such roles as worker, student, leisurite, homemaker and citizen" (Super et al., 1996.p. 126).

Brown and Brooks (1996) claimed that while Super's theory has had tremendous impact on career development theory as a whole, Super, himself, commented on the fact that there are areas of his theory that are not linked together in a cohesive whole.

As cited in Kotrlik and Harrison (1989), and Brown and Brooks (1996),

the Ginzberg, Ginsburg, Axelrad, and Herma (1951) career development theory, was a psychologically based theory which proposed that career development was a life long process. The theory lists four aspects of vocational choice:

> Reality factor (response to pressures of environment in making decisions), educational process (amounts and kind limits or facilitates flexibility and type of choices made), emotional factors (personality and emotions should have vocational concomitants), and individual values deemed important to vocational choice (different values for different career choices) (Kotrlik & Harrison, 1989, p. 50)

In this theory, these career choices were based on compromise and were, for the most part, unchangeable. According to Brown and Brooks (1996) while Ginzberg, Ginsburg, Axelrad, and Herma's theory resulted in much research in the area of vocational development, it had minimal effect on implementation (p. 2).

Holland's (1992) theory of careers and personalities was based on the concepts of personality types and the correspondence between the individual's self-concept (referred to in Super) and career predilection (Kotrlik & Harrison, 1989). His theory contained four major assumptions. The first was that generally, people may be classified into one of six personality types: "realistic, investigative, artistic, social, enterprising, or conventional" (Holland, 1992, p. 4). Each of these personality types had associated with it specific behaviour traits. Individuals' personalities were on a continuum, however the closer an individual's personality types were like that of one of those listed, the greater the possibility of having those particular behaviour traits. The second assumption in Holland's theory was

that an individual's actual living environment was, more or less, like one of "six model environments: realistic, investigative, artistic, social, enterprising, and conventional" (Holland, 1992, p. 4). The third assumption was that individuals strive to find a match between their personality type and their working environment. The fourth assumption was that an individual's behaviour is the result of interactions between that individual's personality and his or her environment. Knowing these facts about an individual allows for the prediction of various outcomes, such as, "choice of vocation, job changes, vocational achievement, personal competence, and educational and social behaviour (Holland, 1992, p. 4).

Holland's theory has been used to design and run interest inventories, to organize and classify occupational inventories, to design self-help materials, and to guide research into many aspects of career and guidance (Spokane, 1996). Brown and Brooks (1996), recognize the impact that Holland's theory has had on research and practice. His theory "all in all is the most influential model of vocational choice making currently in existence" (p. 3).

Krumboltz's social learning theory of career decision-making had as its basis four major areas of influence (Mitchell & Krumboltz, 1996; Kotrlik & Harrison, 1989). These included genetics or genetic characteristics. Certain individuals may be genetically predisposed to excel in certain areas, for example tall people to become professional basketball players. The second area of

influence was the environment. These were typically beyond the control of the individual and include such things as "social, cultural, political and economic forces" (Mitchell & Krumboltz, 1996, p. 238). The third area of influence was learning experiences. From a young age positive and/or negative feedback can play a role in later career paths. The fourth area of influence was interactions. Interaction of the three above-mentioned influences lead to specific "task approach skills" (Mitchell & Krumboltz, 1996, p. 241). These skills were those that have been learned and were able to be applied to new situations (Mitchell & Krumboltz, 1996, p. 242).

The last theoretical perspective to be discussed is that of Gottfredson's (1996) theory of circumscription and compromise which attempted to meld together career development theories from both the sociological and psychological paradigms. She has borrowed certain aspects from Super and Holland. She discussed the idea that an individual's "self-concept and perceived accessibility of an occupation interact with one another and directly influence career decisions" (Luzzo, 1996, p. 239). Gottfredson's (1996) two major ideas are circumscription and compromise. Circumscription is the process of narrowing down acceptable career alternatives to a final career choice through the process of eliminating those unacceptable career options. The elimination of these unacceptable career options is based upon "age-specific themes of size and power, sex roles, and social valuation" (Trice, Hughes, Odom, Woods, & McClellan, 1995, p. 310).

"Compromise is the process by which youngsters begin to relinquish their most preferred alternatives for less compatible but more accessible ones" (Gottfredson, 1996, p. 187). According to Warton and Cooney (1997) her theory "considers the opportunities available at the structural level while taking account of the subjective meanings of vocations given by individuals" (p. 389). Thus, career aspirations make way for career expectations through the process of circumscription and compromise.

While theories of career development and aspiration abound, the previously mentioned theories provide a sound base from which to continue the review of relevant research literature into educational and career aspirations and expectations.

Transition Research

It is commonly recognized that leaving high school and entering the workforce or the post-secondary education system is one of the most difficult transitions that an individual will make in his or her lifetime (Owens, 1992; Powlette & Young, 1996; Roberts, 1997; Sharpe & Spain, 1993; Sharpe & White, 1993). The next topic to be discussed has to do with the educational, career aspiration research and some findings from this research into the transition process.

Roberts (1997) researched transition patterns in Britain and other European countries from the early 1970's to 1989, and has found that this process has

changed dramatically. It has become a much longer process than in the past. He concluded that this was a result of a number of factors: including the high unemployment rate, which had been the trend since the 1970's, the trend towards ever increasing qualifications and the fact that the job market had shifted away from labour type occupations towards those that require higher qualifications and subsequently longer schooling.

MacBrayne (1987) in her review of the research literature on educational and occupational aspirations observed that the research indicated that for most youth the levels of aspirations are higher than those for expectations. She further noted that levels of expectations tend to drop as youth get older, while aspirations tend to remain high.

Conroy (1997), in her career aspiration study of 612 rural Pennsylvanian students from grades 7 through 12, found a number of interesting facts. The majority of students (61.5%) aspired to professional careers, followed by semi-skilled trades (20.9%), service and labor trades (5.7%) and others to a lesser extent. She commented that while the students aspired to these higher level careers they also indicated a desire to remain within the local geographic area to obtain employment. A discrepancy arose because many of the aspired-to careers were not found in that locale. Related to these high aspirations were high salary expectations. Again, this was discrepant to the reality of the area (Conroy, 1997).

Apostal and Bilden (1991) conducted research into educational and

occupational aspirations of 174 rural North Dakota students in grades ten to twelve. They found that 72.4% aspired to obtain a four-year college degree. 18.4% aspired to a two-year post-secondary diploma, and 9.2% had no educational aspirations after high school. In terms of occupational aspirations as measured by the Total Socioeconomic Index (SEI), (Stevens & Cho, 1985) 19.9% of the students aspired to high level careers, 24.5% aspired to medium-high level careers, 38.1% aspired to average level careers, 17.0% aspired to low-average level careers and less than 0.5% aspired to low level careers. As part of their research, Apostal and Bilden (1991) compared their data to that of a research study of a national sample of rural youth, carried out by Dunne, Elliott and Carlson (1981). This national sample yielded the following results for educational aspirations: 29.0% of the students aspired to a four-year college program, 31.8% aspired to a two-year college diploma, and 39.3% had no post-secondary aspirations after high school. In terms of occupational aspirations, 10.8% of the students aspired to high level careers, 28.3% aspired to medium-high level careers, 23.8% aspired to average level careers, 25.1% aspired to low-average level careers and 12.0% aspired to low level careers.

Odell (1988) in a study of 498 rural Ohio tenth and twelfth graders found that approximately 36% planned to attend college and 26% were considering attending college. From this group of students 37.7% were either planning or considering a four-year program and 23.0% were planning or considering a

technical school. In terms of programs. Engineering was the most often cited at 11.8%. While the combined averages for education. engineering. health science. and business were approximately 40%. In terms of occupational expectations. as measured by the Duncan Socioeconomic Index (Duncan. 1961). the findings indicated that over 52% expected to be employed in careers at the medium-high level. Approximately 11% of the expected occupations were executive. administrative. or managerial. 18% were expected in clerical and service occupations. approximately 15% expected to work in the combined occupations of construction. transportation. mechanics. production or labor. (Odell. 1988. p. 19). As with the previously mentioned study. most of the students had unrealistic income expectations.

Walberg (1989) in his examination of data from a national poll of American teenagers (Bezilla. 1988) found that in terms of post-secondary aspirations. approximately 50% planned to attend college full time. 25% to work and attend college part time. 10% to work full time and another 10% planned to enter into the armed forces.

Rojewski (1995) in his study of 129 grade nine to twelve students from rural Colorado found that 53.5% had educational aspirations to attend a four-year college or university. 11.6% a two-year technical institute or community college. 15.5% planned to work after high school. and 17.8% stated no plans. In terms of occupational aspirations and expectations. as measured by the SEI (Stevens &

Cho. 1985) Rojewski found that the average SEI value for aspirations was 58.64. a value that represents the upper end of the average level. The average SEI value for expectations was 49.70. in the middle of the average level. The most often aspired-to career was that of professional athlete (percentage not given) followed by biological or life scientist (5.4%). lawyer (4.7%). and physician (3.9%). Of the expected careers listed the most common career was that of clothing machine worker (7.0%) a local industry. followed by athlete (4.7%). biological or life scientist (3.9%). nurse (3.9%). and employment in the local mine (3.9%). He also examined the relationship between career aspirations and expectations and found that 52.7% of the students had matching aspirations and expectations (Rojewski. 1995. p. 40-41).

Sharpe and Spain (1991a) in their longitudinal study of the transition patterns of 7390 Newfoundland youth found many interesting things. In terms of immediate educational aspirations. 55.0% of the students planned to attend post-secondary education. while 12.1% indicated a desire to attend but would probably have to work. 8.3% planned to seek out employment after high school. 7.6% planned to take a year off. 5.3% would probably continue with their education but would rather work. 4.5% were returning to high school. and 2.7% of the students had no plans. In terms of long range. educational aspirations. 88.5% of the students planned to attend some form of post-secondary program in the future.

In terms of ranked percentages for career aspirations. Sharpe and Spain

(1991a) found that the frequency of careers, as grouped by the Canadian Classification and Dictionary of Occupations (CCDO) (Ministry of Supply and Service Canada, 1990) "major groups" for occupations, were as follows: in medicine and health (18.2); service (15.3%); natural sciences, engineering and math (13.4); social services (10.3%); teaching (10.2%); managerial and administrative occupations (9.2%); clerical (6.8%); artistic, literary and performing arts (5.5%); product fabricating, assembly and repair (5.4%); transport equipment and operating occupations (3.9%); and construction trades (3.8%). The rest ranged from forestry and logging at 1.7% down to mining, oil and gas at 0.08%. It is interesting to note that fishing and trapping were aspired to at a percentage of only 0.3%. In terms of numbers of aspired-to career choices given by the respondents, one preference was the most common (82.3%), two choices was next (11.4%), followed by three preferences (1.2%). Those who responded "don't know" had a percentage of 2.2% while "no response" was 2.8%.

Walsh (1989) as cited in Genge (1996) reported in a longitudinal study of Ontario youth, that 70% of the sample expected to enter post-secondary education after high school, while approximately 13% planned to work. In the follow-up, of those expecting to enter post-secondary education, only 50% actually did and of those expecting to enter the workforce, between 33% and 50% actually did.

Sharpe and Spain (1991b) in their first follow-up survey, obtained similar results. Of the students who had taken part in the initial survey by the fall of the

following year. 61.8% were students. including those who returned to high school. 24.5% were working. and 13% were unemployed. By the time of the second follow-up survey. of those students from the initial survey group. reporting intentions to attend post-secondary schooling (88.5%). only 52% were actually in attendance at that time. nearly 18 months later (Sharpe & White. 1993).

Powlette and Young (1996) in their study of 1.047 grade eleven students from all over Alberta found. in terms of educational aspirations. that 35.0% planned to attend university. 21.9% planned to attend a technical institute or apprenticeship program. 18.5% planned to attend community college. and 24.6% had no plans or did not respond to the question. In terms of industrial groupings. as measured by the National Occupational Classification Index of Titles (NOC) (Employment and Immigration Canada. 1993). the most common industries were health (16.4%). followed by social science (13.3%). natural and applied science (11.7%). sales/service (10.1%). and art. culture. recreation and sport (10.0%). There are other less frequently aspired-to careers listed. Of interest is the "don't know" category (4.8%) and the "no response category" (19.9%). When the students listed career choice aspirations. the majority (61.3%) indicated one choice. followed by two choices (10.6%). and three choices (2.4%) (Powlette & Young, 1996, p. 31-32).

Lewko et al. (1993) conducted a study of 179 grade eleven and twelve students involved in the *Northern Summer School for Excellence in Science*

program. The focus of their study was to determine some factors on student transition into science careers. Of these students, approximately 63% aspired to careers in science while approximately 37% aspired to non-science careers.

Stevens and Mason (1994) in their study of 24, year-ten students from rural Australia, found that career aspirations and expectations were attuned for 37.5% of the students. Another 16.7% had similar aspirations and expectations while 45.8% were different. These included those students who had no expectation listed. They also found that 91.6% of the students had plans to complete their high school education.

While it is important to look at those educational and career aspiration research trends, it is also important to examine the research in terms of the factors that may be affecting these aspirations and transition patterns. The literature abounds with research on the factors that affect aspirations and expectations. The following overview of the literature highlights these subject areas of current research interest, and presents representative findings

Factors Affecting Aspirations

School and Curriculum

There are numerous research studies into the various factors that influence educational and career aspirations and expectations. The first of these factors to be examined are school and curriculum factors (Arnold, Budd, & Miller, 1988; Cherry & Gear, 1987; Dick & Rallis, 1991; Fisher & Griggs, 1995; González,

1997; Hall & Kelly, 1995; Lewko, Hein, Garg, & Tesson, 1993; Mau, Domnick, & Ellsworth, 1995; McKenna & Ferrero, 1991; Noeth, Engen, & Noeth, 1984; Powlette & Young, 1996; Quaglia, 1989; Smith, 1991; Stevens & Mason, 1994; Stone & Wang, 1990; Warton & Cooney, 1997).

The first aspect to be examined is the effect, which the level of program and academic achievement has on aspirations. For the most part, it has been reported that there is a positive relationship between academic achievement and grade average on aspiration levels. In their research, Powlette and Young (1996) found that the level of program had an influence on the plans that students made after high school. Of the two programs, general or advanced, they found 62.3% were enrolled in the advanced program and that significantly more students in this program planned to enter university. They commented on the similar findings in the literature, "program and average grades are generally thought to have an influence on students' career choice" (p. 34). This is supported by similar findings of Anisef, Paasche, & Turrittin (1980) as cited in Genge (1996) in which she reported on the relationship between student enrollment in academic programs and their plans to attend post-secondary programs. In terms of grades they found that the highest number of respondents (41.8%) had grade averages which ranged from 65-79, followed by the grade ranges 80-100 (38.5%), 50-64 (14.9%), and 0-49 (4.8%). Here they also found a significant relationship between grade average and the transitional pathway chosen (Powlette & Young, 1996). McGrath (1993) in a

study of Newfoundland and Labrador youth found that academic achievement in advanced math is related to participation in post-secondary education.

Mau et al. (1995) in their study of characteristics of females who aspired to careers in science and engineering found that academic proficiency in science and math, as well as, grade average had an influence on entering these types of professions. Educational aspirations were also found to influence entrance into science and engineering occupations. They noted that there was also a relationship between educational aspirations and academic proficiency (Mau et al., 1995).

Hall and Kelley (1995) conducted a study of 205 eighth-grade students in rural Indiana. Their focus was to determine the effect of academic achievement on career indecision. Students in a gifted program were considered to have high academic achievement while students from the regular classroom were considered to have average achievement. They reported that there was no significant difference between the average and high achievers in terms of career decisiveness.

Noeth, Engen and Noeth (1984) conducted a study on 1200 high school juniors from Washington State, in which they attempted to describe some factors which affected students' career decisions. They found that 87% of the students reported that grade averages were influential in deciding on a college major and 86% of the students reported that grades were helpful in career decision-making. Odell (1988) found that students enrolled in academic and general programs were

more likely to plan for post-secondary education and have higher occupational expectations than students enrolled in vocational programs.

Smith (1991) in his study of 2,236 seventh and ninth grade students from the south-eastern United States found that a positive relationship existed between a student's academic achievement and level of educational expectations.

Another aspect looked at were the roles of school personnel (such as teachers, counselors, and administrators) on the aspirations of high school students. The results differ in terms of the usefulness and effects that teachers and counselors have on aspirations. Dick and Rallis (1991) in their study on the factors and influences on the career choices of 2,213 high school seniors from Rhode Island, found that for careers in science and engineering the teacher tended to be an influence more often than for students aspiring to other careers.

As part of their study, the students were asked to rate the importance of significant others to their career plans. Of interest is the reporting of school personnel. Only 5% of the students were influenced by teachers or counselors and only 0.9% by principals or vice-principal (Powlette & Young, 1996).

Kotrlik and Harrison (1989) reported that 37.0% of students indicated that teachers were influential in the career decisions of high school seniors. Guidance counselors were influential for 28.8% of the students.

Stevens and Mason (1994) in their study of 24 year-ten students from a small, rural Australian town, found that "teachers did not exert very much

influence on the vocational thinking of these year ten students" (p. 279). Contrary to this are results from the study conducted by Noeth et al. (1984). Of the sample of students, 76% found that teachers were influential in helping them decide on a planned college major and 70% of them reported that teachers were influential in career decision-making. However, the results are not as positive for guidance counselors. Only 59% of the students reported that counselors were influential in their decision regarding area of college major and even fewer (52%) reported counselors helpful in career decision making.

González, (1997) in his study of 2,997 grade eleven and twelve students from Asturias, Spain, reported that students were quite dissatisfied with the school personnel in terms of help to find career information, "between 85% and 71% denounced the scant or non-existent support of persons in charge of the centers, guidance staff, guidance teachers, and other teachers" (p. 225).

Cherry and Gear (1987) in their study of 1,366 level three, four and five students in Great Britain, found that the students attached high levels of importance to discussions with counselors. This was ranked as the second most important, after talks with the family, for level three students and first for level four and five students. Teachers on the other hand fared quite poorly. Talking with teachers about career aspirations ranked sixth out of nine in importance for level three and eighth for level four and five.

Arnold et al. (1988) studied the perceived usefulness of various sources of

career information. In their study of 98 fifth and sixth form students in the south-west of England, they found that talking to career counselors ranked fourth out of six.

Warton and Cooney (1997) in their study of 1,048 year ten students in New South Wales, Australia, found that 70% of students were given sufficient information on subject areas for next year. Students in this study would have to leave the local area at the end of year ten to move to a larger center for years eleven and twelve. Of those students who received information, 70% reported obtaining information from teachers and 64% from guidance counselors. Guidance counselors and teachers were ranked second and third respectively, in terms of the usefulness of information provided while parents ranked first.

McKenna and Ferrero (1991) conducted a study of 5,937 grade nine students from Pennsylvania centered on attitudes towards non-traditional careers. In this study, they found that approximately 74% of the students rated teachers as providing between some, and much help in providing career information. Counselors were rated by approximately 67% as providing some or much help. Fisher and Griggs (1995) reported that 60% of the students found teachers and counselors supportive and 45% of the students indicated that teachers and counselors acted as role models.

Another important factor to consider is the role of courses or subjects, as well as interest, on the aspirations of high school students. The literature suggests

positive relationships between subject interest and career aspirations. Stone and Wang (1990) used a sub-sample of students from the *High School and Beyond National Longitudinal Study of the High School Class of 1982*. They found that for students enrolled in high school marketing courses, interest in these courses had a significant influence on their career aspirations. In the study by Noeth et al. (1984) 93% of the students found that interesting classes were the most helpful in deciding on a college major, while 92% indicated that interesting classes were also helpful in career decision-making. In their study, Lewko et al. (1993) found that 92% of the students had a strong or very strong interest in science and 93% indicated a high or very high motivation to do well in science. When comparing interest levels and science versus non-science career aspirations, approximately 63% of the students with science career aspirations reported a strong interest level while only 37% of those with non-science career aspirations reported a similar interest level. Fisher and Griggs (1995) in their study of factors that influenced career development sampled 20 junior and senior university students. They found that 60% of the students had been influenced by interest in certain subject areas, while 55% of the students indicated that "a challenging high school curriculum or extensive college preparatory program motivated them toward their career direction (and) 70% attributed it to the relavence of the academic program" (p. 68). Cherry and Gear (1987) reported that in terms of course offerings, students indicated that having actual career courses ranked third out of nine in importance

to influencing career aspirations for level three, four and five students. González (1997) found that 36.9%, the second highest percentage, of the students reported that they obtained information and help from classes in various subject areas. The highest percentage (43.8%) of the students found field trips to be the most informative and helpful.

The last factor of school and curriculum issues to be discussed has to do with the role or effectiveness of various sources of career information. These sources include: books, brochures, papers, television, radio, and computer programs. González (1997) found that of the students in her sample, 54.8% reported help in obtaining information from printed material such as books and papers, 28.3% found television, radio, audio and video tapes helpful, and 19.8% found computer-based information systems helpful. Cherry and Gear (1987) reported that the students in level three ranked books and leaflets about careers eight out of nine in terms of helpfulness. Fourth and fifth year students ranked them seven out of nine. Arnold et al. (1988) reported that 56% of the students indicated that books and leaflets were useful for career information. McKenna and Ferrero (1991) reported that 65% of the students in their study found television and radio, between some and much, help in providing career information. Approximately 82% of the students found books and articles to be of some or much help, and 49% found that computers were some or much help.

Home and family

The next area of examination is home and family influence on educational and career aspirations and expectations. As with the previous section on school and curriculum factors, there is a myriad of research into home and family factors (Arnold, Budd, & Miller, 1988; Cherry & Gear, 1987; Conroy, 1997; Fisher & Griggs, 1995; González, 1997; Kotrlik & Harrison, 1989; Lee, 1984; Lewko, Hein, Garg, & Tesson, 1993; Ley, Nelson, & Beltyukova, 1996; McDonald & Jessell, 1992; McNair & Brown, 1983; McWhirter, Larson, & Daniels, 1996; Noeth, Engen, & Noeth, 1984; Odell, 1988; Powlette & Young, 1996; Sharpe & White, 1993; Smith, 1991; Stevens & Mason, 1994; Stone & Wang, 1990; Way & Rossmann, 1996; Trice, Hughes, Odom, Woods, & McClellan, 1995; Wharton & Cooney, 1997; Wilson & Wilson, 1992).

Many of these family variables are interconnected. In terms of reporting the relevant research, there seem to be a number of important areas. The first to be reported is that of parents' socioeconomic status (SES) on student aspirations. Often this is associated with parental occupation and parental levels of education.

Odell (1988) found that the SES of families in the study was low and that students in his study aspired to higher occupations than the parents' actual occupations. There was a low association between parental occupation and "all measures of educational expectations as well as with expected occupations" (p. 19). Most of the parents were not college-educated and overall, the students'

educational expectations were higher than the actual levels of education for the parents.

Conroy (1997) found that there is a significant relationship between a father's job and the student's aspired-to occupation. In her study, 67% of the fathers had a reported education level of high school or less. This is similar for the mothers (65%). She formulates a link between parental education and job availability, which could influence student aspirations.

Smith (1991) found that there was a relationship between maternal and paternal education expectations and student educational expectations. However he did not find a relationship between parental occupations and student educational expectations.

As cited in McWhirter et al. (1996) there were a number of studies which link parents' educational level with youths' educational aspirations (Larson, Daniels, Schriger, & Freeman, 1993; Sariagiani, Wilson, Peterson, & Vicary, 1990). Their study of 63 gifted high school students of color determined that there was a positive correlation between the levels of parental education and the educational aspirations of the children.

In a similar study of 375 grade 10 students from the rural south-east, Lee (1984) found that there is a relationship between SES and both occupational aspirations and expectations.

McDonald and Jessell (1992) in a study of 242 seventh and eighth grade

students found that "SES had a significant relationship with their (students') occupational attitudes and perceived occupational abilities" (p. 249).

Way and Rossmann (1996) in their study of 1,266 grade twelve students from Georgia, Pennsylvania, Minnesota, and Arizona, on the role of family in school-to-work transition, found that high SES was related to a number of family variables, such as parental participation in school and more interaction with parents about careers. These variables were related to increased occupational aspirations. "Thus, high socioeconomic status does not appear to provide a guarantee of transition readiness, nor does lower socioeconomic status appear certain to prevent it: the effect seems to be mediated by the day-to-day functioning styles of the family" (Way & Rossmann, 1996, p. 25). They also reported findings that SES had a significant effect on having post-high-school plans for work or further education as opposed to having no plans. McNair and Brown (1983) conducted a study of 259 grade 10 students from North Carolina. They were investigating variables, which could be used to predict occupational aspirations and expectations. They found that SES had a significant effect on aspirations, but not on expectations. Marjoribanks (1986) as cited in Wilson and Wilson (1992), found that aspirations were influenced by SES insomuch as the aspirations of middle-class youth were related to attitudes towards school; while aspirations of low SES youth were influenced more by parental factors (p. 53). Wilson and Wilson also found that there were significant effects from parental levels of

education on student aspiration levels. This was also the case for family SES level on student aspirations.

Lewko et al. (1993) found a number of parental factors had an effect on student aspirations. The students in their study were involved in a summer science institute after having been recommended by their teachers for outstanding abilities in math and science, as well as keenness to learn. All the students had relatively high-level career aspirations and the majority came from middle to high socioeconomic backgrounds. They concluded that there was a positive relationship between SES and career aspirations. Another finding was that the parental level of education, particularly the father, was related to higher student aspirations.

Sharpe and White (1993) in their analysis of 4,977 post high school students found a relationship between the measurements of the general educational development (GED) and the specific vocational preparedness (SVP) levels, and enrollment in post-secondary education programs. The GED and SVP are subscales of the Canadian Classification and Dictionary of Occupations (Minister of Supply and Service Canada, 1990) and they measure basic reasoning, math and language skills and time required for career training respectively (for a more detailed explanation see appendix D). While the GED and SVP are not direct measures of socioeconomic status, they are related to SES.

Trusty et al. (1997) did not find a significant relationship between the

parents SES or level of education and their involvement in their teenagers' career development. Mau et al. (1995) also found the relationship between SES and student aspirations minimal compared to that of other factors. This was similar to findings by Stone and Wang (1990).

Another aspect of family which relates to educational and career aspirations, and expectations was in terms of levels of influence that family members, parents in particular, have on the students. Influence can mean perceived helpfulness, parental expectations, and acting as role models. The literature indicated that parental influence was a major factor for student aspirations and expectations.

Wilson and Wilson (1992) discussed the role of family influence on college attendance. They contended that in families where college attendance is assumed, the rate of attendance was higher than in those families where college attendance was not assumed. In addition, they found a significant relationship between parental aspirations for students and the students' levels of educational aspirations. They also found a significant relationship between high levels of parental course monitoring in high school and high levels of student educational aspirations. Ley et al. (1996) also found that parental expectations for success matched that of students.

Powlette and Young (1996) found that "across the nine categories of significant others, respondents indicated that parents were the primary significant

other influence in their career selection" (p. 35). McNair and Brown (1983) found similar results, that "parental influence was the primary significant predictor of occupational expectations" (p. 34). Their influence was also the only significant predictor of career maturity. In their study, parental influence was measured by student responses to questions relating to levels of encouragement or discouragement. Similar finding were reported by Odell (1989), "expectations parents held for their children beyond high school had a profound influence upon plans for advanced education and areas of advanced study" (p. 20).

Noeth et al. (1984) found that 91% of students indicated that families were the second most helpful factor in trying to decide on a college major. They were also the second most helpful influence (90%) for students trying to decide on an occupation.

Stone and Wang (1990) found that parents influenced career plans by acting as role models. This was a positive relationship to career aspirations for fathers' occupations, but negative for the mothers' occupations. In addition, they found that there was a relationship between parental influence on school plans and career aspirations. Fisher and Griggs (1995) found that 45% of the students indicated that parents acted as role models and that this was influential in terms of aspirations. They also reported that 95% of the students indicated that parental support was also an influential factor. Lewko et al. (1993) reported that parental support was high in their study. Over 75% of the students reported that both

parents often encouraged them to do well in science. Mothers were seen as slightly more supportive than fathers.

Kotrlik and Harrison (1989) found that for the students in their study, 69.4% indicated mothers had influenced career decisions and 59.0% indicated that fathers had influenced career decisions. Other family members had influence as well. Of the students, 37.6% reported that brothers or sisters had an influence. Other relatives, such as grandparents, aunts and uncles, influenced 44.5% of the students. McKenna and Ferrero (1991) found similar results, approximately 93% of the students indicated that the mother was either some or much help in providing career information, while approximately 88% did so for fathers. Similarly, González (1997) reported that 66.3% of students in her study indicated that parents provided either moderate or a great deal of help in career exploration. Other family members were reported to have been an influence by 53.4% of the students. Cherry and Gear (1987) found that speaking to family ranked first in importance, in terms of career aspirations, for year three students and ranked second in importance for year four and five students. Warton and Cooney (1997) found that 70% of the students in their study went to parents as sources of information. This was tied for the highest rating with teachers, however in terms of usefulness of the information, parents were rated four out of eight possible sources of career information. In the study conducted by Arnold et al. (1988) students reported that the family was ranked second in usefulness in terms of

obtaining relevant career information.

Stevens and Mason (1994) found that parental influence was important to career aspiration, but that the maternal role was more important than the paternal role. They also found that extended family played a role in career aspirations as well "the dominant extended family influences on these students' career choices came from aunts and uncles" (Stevens & Mason, 1994, p. 277). Lee (1984) also found that parental influence had an important relationship with student occupational aspirations and expectations (p. 33).

Rural Factors

The next area in the literature examined was that of the influences of area of residence. Since this current research project was based in a rural setting, influences of living in a rural area were examined. A number of researchers have examined rural influences on youth aspirations. Others have conducted research in rural settings with aims of targeting interventions. Still others have made comparisons between rural and non-rural youth (Apostal & Bilden, 1991; Cob, McIntire, & Pratt, 1989; Cowher, 1994; D'Amico, Matthes, Sankar, Merchant, & Zurita, 1996; Haller & Virkler, 1993; Hektner, 1995; Kampits, 1996; Ley, Nelson, & Beltyukova, 1996; Looker, 1993; Reid, 1989; Rojewski, 1994; Toepfer, 1997; West & Penkowsky, 1994).

Most researchers agreed that there were rural-specific problems associated

with student development of educational and career aspirations and expectations. Cowher (1994) described an initiative to overcome problems associated with career preparation in rural northwestern Pennsylvania. Problems discussed in this paper included the failure of rural areas to adapt to increasing job entrance requirements in terms of youth preparation, as well as geographical, financial, and social barriers to increased levels of youth preparation. Rowjewski. (1994) supported these findings: "some rural problems may actually interfere with successful career development including geographic isolation, fewer employment opportunities, lack of economic vitality, and lower educational and vocational achievement" (p. 49). Toepfer (1997) in his discussion paper on rural school-to-employment issues noted that:

> rural areas are more removed from large businesses and commercial sectors and employment opportunities continue to shrink. As small and independent businesses shut down and/or leave those communities, more rural residents either commute to work in metropolitan areas or move there. This will make it increasingly difficult for rural school to make their youth completely employable (p. 30).

Apostal and Bilden (1991), discussed problems for rural students such as, "reduced accessibility to higher education, narrow rural school curricula, limited exposure to the world of occupations and few role models" (p. 153). Reid (1989), in his discussion paper of the rural economy and its effects on rural youth noted that there were problems associated with rural economic restructuring. He discussed the fact that as technologies improved in rural industries, such as

mining, forestry, and farming, more and more workers were becoming displaced. In terms of this thesis the same could be said for much of rural Newfoundland, with one major difference: reduced fish stocks, as well as improved technologies have resulted in high levels of worker displacement. "Most of the jobs now being created require far higher skills than traditional rural jobs. Few of the jobs demanding higher skills are being created in rural areas" (Reid, 1989, p. 18). D'Amico et al. (1996) in their study of 33 high school students from three Midwestern rural communities found that the young people "feel rural isolation acutely" (p. 148).

Hektner's (1995) research on 918 eighth, tenth, and twelfth graders from the Midwestern United States noted that there were concerns about the low levels of educational and career aspirations of rural youth. He maintained that a major problem area was in the conflict between students' desire to succeed, both educationally and occupationally, and the necessity of relocating in order to do this. Looker (1993) in a study of 1,200 17-year olds from two urban areas, Hamilton, Ontario and Halifax, Nova Scotia, as well as rural Nova Scotia discovered that problems with youth transitions in rural areas included limited educational and occupational opportunities. "The rural respondents were aware of fewer types of occupations than the urban youth . . . rural youth listed fewer course options at their school than did urban youth" (p. 56). She also made note of the fact that there seemed to be a dilemma, for rural youth, between educational and

career aspirations and leaving their community. She concluded that this predicament led to compromise. " . . . rural youth were more likely than urban youth to see seasonal work supplemented with unemployment insurance as a viable option" (p. 60). Roessler and Foshee (1996) also made note of the fact that there were limited transition opportunities in rural settings. Their research focused on an attempt to increase occupational learning outcomes of rural special needs students through an employment related curriculum unit called *Life Centered Career Education*. West and Penkowsky (1994) discussed problems associated with youth transitions in both rural and urban areas. They cite Helge (1983) as identifying some problems for transition service delivery to rural youth which included: inadequate funding, unavailable services, need for staff development, need for support services, and isolation (p. 169). Despite these drawbacks they went on to mention positive aspects of rural education such as smaller class size, more individualized attention, and the fact that often teachers know local employers and can make direct input on students' behalf.

Another aspect of rural education research was in the disparity between rural and urban areas. Kampits' (1996) paper outlined a rural partnership program between rural schools and urban colleges and universities. In her paper, she commented on a number of factors, which distinguished rural from urban. "Proportionally fewer rural than non-rural seniors intend to pursue college degrees, and . . . rural students have lower aspirations, thus even further limiting

their access to educational opportunities that are critical to improving their prospects for life" (p. 172). She also cited Stern (1994) in that rural areas, along with small nonmetropolitan urban centers have had the lowest per capita income in the United States. Kampits linked this low income to curricular areas, stating that, "low income students were 44% less likely than students from more affluent families to be enrolled in more demanding college-prep courses" (Kampits, 1996, p. 172). Sharpe and White (1993) reported that post-secondary attendance profiles were different for rural and urban students. While 53.5% of all post-secondary students were from rural areas, rural students comprised only 43.9% of the total university population. Other post-secondary institutions such as community colleges, technical institutes and private career colleges had higher proportions of rural than urban students. Sharpe and White explained these differences in terms of ease of access to the various institutions. University programs were offered in urban centers, while colleges were more widespread. Cobb et al. (1989) conducted a study of 10,416 high school juniors and seniors from rural, suburban, and urban areas who were matched for socioeconomic variables. The data came from a longitudinal study, the *High School and Beyond* study of 24,725 high school juniors and seniors, conducted by the National Center for Educational Statistics. In their study, Cobb et al., concluded that rural students valued work more, and academics less than their urban and suburban counterparts. Another finding was that educational aspirations were lower for rural students than for

urban and suburban students. In terms of occupational expectations of rural youth. Cobb et al. reported that fewer rural students expected to be "in higher level positions, and more often in lower level, less skilled areas" (p. 13). They also noted that more rural students were willing to move in order to find employment. in fact many indicated that they would prefer to move.

Apostal and Bilden (1991) reported that both educational and occupational aspirations of students in their study were quite high and that there was little indication of differences between urban and rural students. Haller and Virkler (1993) in their analysis of 20,637 high school seniors found that while there were significant differences between the rural and non-rural samples in terms of educational and occupational aspirations, these differences were quite small: "Although the difference is statistically significant, with a sample of over 20,000 virtually any difference would be" (Haller & Virkler, 1993, p.174). They also found that rural students aspired to professional and technical occupations less often (50%) than urban students (59%) and that rural students are more likely to expect a low white collar or blue collar job (34%) than urban students (29%).

Gender Factors

The last section to be examined dealt with relevant research into gender differences in terms of educational and career aspirations and expectations. There was much research that suggested there were differences (Apostal & Bilden, 1991;

Brown, 1997; Conroy, 1997; Dick & Rallis, 1991; Farmer, 1983; Farmer, Wardrop, Anderson, & Risinger, 1995; Lamb, 1993; Lewko, Hein, Garg, & Tesson, 1993; Looker, 1993; Mau, Domnick, & Ellsworth, 1995; McKenna & Ferrero, 1991; McMahon & Patton, 1997; Morrison, Bell, Morrison, Murray, & O'Conner, 1994; Odell, 1989; Post, Williams, & Brubaker, 1996; Powlette & Young, 1996; Rojewski, 1995; Stevens & Mason, 1994; Wallace-Broscious, Serafica, & Osipow, 1994; Wilson & Fasko, 1992).

In terms of gender differences in aspiration levels, there were mixed findings (Apostal & Bilden, 1991; Odell, 1989; Rojewski, 1995). Some of the research pointed out that females have had higher levels of aspiration than males, while other research findings indicated the opposite, still others reported no gender differences. This may have been due to the time period in which data were collected. Odell (1989) cited Marini and Greenberger (1978) to support the fact that early research indicated that level of educational and career aspirations were lower for females than for males. Rojewski (1995) cited Bogie's (1976) findings that females had lower occupational expectations than males and that there was a greater discrepancy between aspiration and expectation levels for females than for males. A more recent study (Morrison et al., 1994) involved 1,062 grade ten and twelve students from Newfoundland and Labrador. They found a gender difference in which females provided significantly lower salary estimates for various careers than did males. They discussed possible ramifications of having

lowered salary expectations. "Clearly their low pay expectations have ominous implications, both at their point of entry into the workforce and over the course of their careers" (Morrison et al., 1994, p. 188). Farmer et al. (1995) commented on the change in aspiration levels for females as being part of the "changes in opportunity structure for women that positively affected their career opportunities" (p. 155). They were concerned with the gender disparity in science, math and technology careers. Their study involved a ten-year follow-up of an earlier study in which a group of 173 students was identified as aspiring to science careers. In the initial study, there were higher numbers of female students aspiring to science careers than male students. In terms of actual careers, it was found that more males (46%) than females (36%) were currently working in a science-related occupation. Dick and Rallis (1991) also commented on gender concerns for employment in scientific and engineering occupations. "Women tend to be disproportionately underrepresented in science and engineering fields" (p. 281). Lamb (1993) investigated the attitudes of females towards mathematics. She discovered a link between reportedly consistent lower mathematics scores and attitudes for females, and limited occupational choices in the future. She cited Boswell and Katz (1980), as reporting that the female students in their study were unable to enter technical fields of study in college, because of deficiencies in mathematics credits taken in high school. Lamb also concluded "many gifted girls fail to realize the potential of the early years, settling in jobs well below their

ability" (p. 28). Powlette and Young (1996) found that of those students aspiring to careers in natural and applied sciences, 71.5% of them were males and only 28.5% of them were females. Mau et al. (1995) described certain characteristic of females who aspired-to careers in science over those who aspired to be homemakers. Overall they scored significantly higher on educational aspirations, grade point averages, and perceived parental expectations.

Studies that were more recent have found that females had higher career aspirations than their male counterparts. Conroy (1997) reported that females aspired to more high status jobs than did males. She explained this by linking these high aspirations to females' higher grades, and higher enrollment in college preparatory programs. Rojewski (1995) reported that females had significantly higher career expectations than males. He also noted that there was a significantly greater agreement between career aspirations and career expectations for females than for males. Apostal and Bilden (1991) found similar results for career aspirations. Females aspired to significantly higher-rated occupations than did males. They hypothesized that this had come about as the result of "greater opportunities in higher-level careers for women brought about by the women's movement" (p. 158). Post et al. (1996) found in their study of 202 eighth grade students' aspirations and expectations, that there were significant differences in educational expectations between males and females. "Boys are more likely to plan to attend a community college, to participate in other training programs, or to

go to work, whereas girls are more likely to plan to go to college" (Post et al., 1996, p. 253). Another significant finding, in terms of career expectations, was that females chose occupations that required college degrees more often than males. Farmer (1983) in her study of the career plans of 1,234 ninth and twelfth graders from various parts of Illinois, found that females scored significantly higher than males on levels of occupational choice as well as on levels of career commitment (p. 42). "Career commitment is the measure of the extent to which career role is perceived by students as central to their adult role" (Farmer, 1983, p.43). She also found that more females than males were choosing non-traditional occupations, 35% and 3% respectively. McMahon and Patton (1997) conducted a study of 55 various students ranging from preschool to post-compulsory. They reported that there were gender differences over the wide range of age groups. These differences included males being more gender-stereotyped in terms of job preferences, males having greater job knowledge, and males more often discussing the relationship between schooling and work. Sharpe and White (1993) also found that more females than males planned to attend post-secondary institutions.

Some studies have found little or no gender differences for aspirations. Brown (1997) conducted a study of 301 grade nine through twelve African American students from the Midwest. There was no significant difference reported for educational expectations. In addition, educational expectations were in line with occupational expectations for females as well as males. Farmer (1983)

noted similar findings in that there was not any difference in educational aspiration levels between males and females. Apostal and Bilden (1991) also found there was not a significant difference in levels of educational aspiration between males and females.

Other studies have involved gender differences in perceptions of helpfulness or influences of people and resources towards career aspirations. McKenna and Ferrero (1991) found that males reported fathers (48.5%) and females reported mothers (50.1%) as being much help in providing career information. Males reported mothers as being the second most helpful resource (44.3%) while females did not report fathers as second. Stevens and Mason (1994) reported that a majority of females discussed career plans more often with the mother while a majority of males discussed career plans with both parents.

This was by no means an exhaustive examination of the literature on educational and career aspirations and expectations. It does, however, offer the reader an insight into some of the major areas of research into the field. In addition, it elucidates the major themes of this current research paper.

CHAPTER 3

Methodology

To gain information about student aspirations, and factors that may influence the development of career/educational choices, it was decided to use two methods to gather data. The first was to conduct a survey of all the level III students in the school, Island Central High. As Edwards, Thomas, Rosenfeld, and Booth-Kewley (1997) note about the effectiveness of surveys in obtaining precise information on various topics, "often, no other data-gathering procedure can be used to collect the desired information more effectively or efficiently". The use of surveys is advantageous in that it is a way of obtaining great amounts of information such as demographics, perceptions, opinions, or other features of a population (Rosenfeld, Edwards & Thomas, 1995).

Prior to conducting the survey a letter requesting permission was sent to the School Board Director (see Appendix B) and a consent letter was sent to each household (see Appendix C) asking permission to survey the students. The second means of data-gathering was from the students' cumulative records and transcript of marks. Permission to use school marks was obtained from the principal.

Sample

The study involved 62 of the 68 students initially enrolled in level III at the

Island Central High. Three students dropped out of high school prior to the administration of the questionnaire and two students refused to take part in the study. Thus there was a participation rate of 95.4%. The gender breakdown of the test group was 33 females and 29 males.

Instrument

A survey instrument was designed to collect as much information as possible about the overall environment that may influence the career/educational choices of level III students.

The instrument was constructed from a set of variables identified from a listing of factors in a student's life. This listing was created by the author and, in order to achieve construct validity, was subsequently edited and changed by a number of teachers in the high school and the thesis supervisor. From this set of factors a series of questions for the survey instrument were created. The questionnaire (see Appendix A) was also created by the author and in order to ensure validity was checked by education professionals including: Dr. Ken Stevens and Mr. Gerry White from Memorial University of Newfoundland, as well as the principal and a number of teachers from Island Central High. The questionnaire was developed to:

1) gain an understanding of the career/educational aspirations of the students of the Island; and,

2) determine some of the factors which influence career/educational paths taken by individuals.

Identifiable factors have been organized under the following headings:

Home/family/community

A major influence upon a child's entire being is the home-family-community environment. With this in mind, a number of areas involving the family situation needed examination. These included:

a) Parental status - were both parents alive and together?

b) Job status - did either or both parents work? If so, what type of employment?

c) Education - what were the levels of education achieved by other family members?

d) Siblings - were there any other children in the family? If so, how many?

e) Family concern - have family members helped to plan the career paths with the student? If so, how?

f) Attitudes - were there cultural attitudes towards careers and education? What were they?

g) Career clusters - were there a number of easily identifiable careers which could lead to an over emphasis towards these particular career paths?

h) Travel - have the students had experiences off the Island? If so, where?

i) Location - did the student have family members living off the Island? If so, where?

School

The entire school experience can play an important role in the decision-making process that a student undergoes when making future plans. Some factors that needed to be looked at included:

a) Courses - what were the course choices that students made? Why did they make these choices?

b) Groups and extra-curricular activities - which of these, if any, have the student been involved with?

c) Career guidance – have the students studied any career-choice courses such as career education, or has the student obtained information from a guidance counselor or other person(s)?

Achievement

A student's achievement in school has a relationship with that student's career/educational plans. Some of the pertinent questions were:

a) How well has the student done overall?

b) What were their areas of strength and weakness?

Peers

Peer groups play an important role in shaping a student's attitude and subsequently the student's decisions about future plans. Some factors that needed to be examined were:

a) Plans - did the peer group, or individuals within the group, have plans for continuing education?

b) Relationships - did boyfriends or girlfriends influence a student's decisions?

c) Drug/alcohol use – did the student use drugs or alcohol? If so, how often? Why? With whom?

d) Community - was the student involved in community work such as church, hospital, and scouting/guide movement? Were the peers also involved?

e) Job experience - did the student have part time or summer employment? What type of job? If so, at what income level?

Media/information technology

Other than those experiences received from school activities, have students had exposure to media sources of career or educational information? How has this exposure affected career/education decisions? Topics that needed to be addressed included:

a) Television/radio – to how much TV/radio did the student watch/listen? What types of shows? Did the student gain relevant career/educational information from these sources?

b) Information Technology - did the student have access to a computer at home? Was there internet access at home?

c) Information Technology - did the student use the computers at school? Did the student have access to the internet at school? Have they been used for career/educational planning?

d) Books, magazines, papers - what did the student read and how much did the student read?

Other important people

Often in a student's life there are people who have had an impact on the him or her. Sometimes that impact can be positive while other times negative. It is important to take this into account. These influences included:

a) Role models - was there a person to whom the student looks up, who may have influenced the student's career path?

b) Negative influences - were there people whose example has negatively influenced the student's decisions?

Other than for demographic information. the open-ended question format was chosen for a number of reasons. Answers to questions in the open-ended format allow for information gathering which would otherwise not be gained through the use of a fixed set of answer choices (Edwards et al.. 1997). This format may also be more beneficial in getting data about emotional. controversial or forbidden subjects (Converse & Presser. 1986).

Another advantage of the open-ended question format as noted by Sheatsley (1983) in Edwards et al. (1997) is the fact that "they allow respondents to answer using their own frame of reference. without undue influence from pre-specified alternatives" (p. 26). Thus bias is minimized in terms of listing those answers that the researcher may have anticipated rather than those that actually occur. Also there is no forcing of response alternatives which may not reflect the actual answers that respondents would prefer. Written answers also allow for a more detailed examination of the topics being questioned than would be the case with close-ended questions (Edwards et al.. 1997). "Closed-ended questions may compel people to express an attitude when they have no opinion on the matter or. even worse. when they do not understand the question" (p. 25).

Open ended questions are also easier and less time consuming to write. Due to the constraints upon the researcher to get the data set in as timely a fashion as possible it was decided to use this approach to avoid the time needed to

construct response alternatives and to create response scales.

Some of the disadvantages, as discussed in Edwards et al. (1997), in the use of the open-ended question format for use as survey items include: the time and effort required by the researcher to read and code the answers to this type of question format: the fact that respondents may not fill in the entire questionnaire due to the perceived work involved in filling in written answers and the fact that differences in writing skills may exist between respondents. Therefore there may be a range in the quality of responses given that, "open-ended questions almost inevitably elicit a certain amount of illegible, irrelevant, incoherent, and repetitious information from respondents" (p. 27).

Research Procedure

The survey was administered to all individuals during the last class period on a day in late April. It was carried out late in the school year in order to ensure that the students have been in level three for the majority of the year, thus giving the students time to have experiences which may have played a role in shaping their career/educational aspirations.

Data analysis

Upon receipt of the completed questionnaires, the coding of the responses was carried out using the following method. Fifteen questionnaires were selected at random to obtain the initial code set. Responses to each question were recorded and given a category code. From these, a set of value labels was created. Other codes were added, as needed, upon the coding of the remaining 47 questionnaires. Each question on the questionnaire was given a code title. For example, question #2 under the student heading of the questionnaire was given the title code St2. The responses to the question St2 (see questionnaire appendix A) for the initial 15 were recorded by writing out the question code and the question. The I.D. numbers of the questionnaire and the sex of the respondents were also recorded. Then the response given by the student was written out and the code(s) were given for each response. From this, a set of value labels was created, that were used to code the rest of the questionnaires (see table 3.1).

Table 3.2 shows the value labels created from the responses in table 3.1. These codes were then entered into the spreadsheet program, Microsoft Excel. This process was repeated for other questions from the questionnaire.

Table 3.1:
Identification, Gender, Written Responses and Response Codes for Question St2, What Do You Need To Do In Order To Have This Perfect Job?

Id	Gender	Response	Code
2b	F	You need advanced classes, good marks. I would need to go to post secondary schooling, and a high school diploma.	01.02.03.04
1a	M	You would need an education in Nautical Science.	03
6	F	Training, going too school.	03.05
24	F	Degrees in science, many years in school, maybe even a Ph.D.	09.06
5	F	Go to Coast Guard School to receive proper training	03.05
10b	M	Talent, the business doesn't look for the well trained, but instead	07
1	M	Good marks and lots of training and specialties.	02. 05. 08
10	M	Diploma at Dalhousie and a B.Sc.. at T.U.N.S.	10. 09
8	F	I need a diploma in architectural engineering.	10
33	F	In these professions I would need either: a law degree, training in social work, or a degree in biology.	09. 05
34	F	High school diplomas, general background, attend fashion school.	04. 03. 11
25	M	I would need a Bachelor of Engineering, which would take 5 years. A Masters degree would be much better.	09. 06
7b	M	Training in a bible school.	05. 03
4	F	An undergraduate degree, med. school, residency.	09. 06
17	F	Some post-secondary schooling is a plus. Then training before you can become an (RCMP) officer. They like to have more well rounded people on the force.	03. 05. 11

Table 3.2:
Assigned Value Labels for Question St2, What Do You Need To Do In Order To Have This Perfect Job?

Code	Comment
01	Advanced classes
02	Good Marks
03	Post secondary
04	High school diploma
05	Training
06	Post graduate degree
07	Natural talent
08	Specialties
09	University degree
10	Post secondary diploma
11	Knowledge/experience
12	Hard effort
13	Certain high school courses
14	Healthy and fit
15	Get accepted

These included question St4 - What are you going to be doing at the end of this school year or the beginning of the next school year?

Table 3.3 gives the value labels for question St4.

Table 3.3:
Value labels for Question St4 - What Are You Going to be Doing at the End of This School Year or the Beginning of the Next School Year?

Code	Comment
01	College
02	University
03	Work
04	Return to high school
05	Undecided

This process was used for all multiple-response questions on the survey. Through this process, the data set was created for analysis.

Along with the reporting of the actual occupations aspired to, levels of aspiration, as indicated by levels of both, the General Educational Development (GED) and the Specific Vocational Preparation (SVP), were also reported. Both the GED and the SVP are subscales of the Canadian Classification and Dictionary of Occupations (CCDO) (Minister of Supply and Service Canada, 1990). As cited in Sharpe and Spain (1993) they are designed to measure training time, which is:

> a combination of formal school education, informal studies, job experience, and on-the-job or inplant training required of a worker to obtain the knowledge and skills necessary for average performance in a particular occupation. (p. 197)

The GED and SVP levels were used to compare and arrange occupations

according to difficulty and complexity. The GED Scale looked at three factors: reasoning, mathematical development and language development. For a more detailed explanation of these levels for both the GED and SVP see appendix D.

The GED:

> embraces those aspects of education (formal and informal) which contribute to the worker's (a) reasoning development an ability to follow instructions, and (b) acquisition of "tool" knowledges, such as mathematical and language skills. GED is education of a general nature, which does not have a recognized specific, occupational objective. Ordinarily such education is obtained in elementary school, high school, or college; however, it is derived also from experience and self-study (Sharpe & Spain, 1993, p.197).

The SVP is:

> Measured by the amount of time needed to acquire the information, techniques, and skills needed for average work performance in a specific occupation. This training may be acquired in school, work, military, or institutional environment, or through vocationally-oriented hobbies Sharpe & Spain, 1993, p.197).

Both the GED and SVP allow for a measure of occupational aspirations for any career in that, as they measure reasoning levels and training time, they give an indication of the level of commitment needed to attain various careers. Thus, the higher the level of GED and SVP, the higher the level of aspiration for a particular career. The GED is given a measure from one to six and the SVP is given a measure from one to nine. The data was analyzed using SPSS for Windows (Norusis, 1990; Norusis, 1993).

CHAPTER 4

Educational and Career Aspirations and Expectations

This chapter is organized so that the reporting of the data analysis will follow along the same lines as the research questions outlined in chapter one. Descriptive statistics as well as chi-squares, correlations, and crosstabulations were used to analyze the data from the questionnaire. Values at .05 or less were considered significant.

The major research question: *what are the educational, as well as the career expectations and aspirations of youth from geographically isolated rural communities?* can be broken down into a number of finer points for examination. The first point would be that of determining the major industrial groupings reported in terms of aspirations. Table 4.1 lists the frequencies of student aspirations according to the major industrial categories as set out in the Canadian Classification and Dictionary of Occupations (CCDO) by the Minister of Supply and Service Canada (1990). The most common major industrial grouping to which the subjects aspired, at 22.6%, was in the service industries. This included careers such as, cooks, correctional officers, and haircutters. The next most frequent major industrial grouping was in the artistic, literary, performing arts and related occupations at 16.1%. These included aspirations to such careers as actors or actresses and musicians. Occupations in medicine and health had a frequency of 14.5%, as did occupations in natural sciences, engineering and mathematics.

Table 4.1:
Frequency of Industrial Aspirations

(N=62)

Occupational Group	Frequency	Percent (%)
Managerial, Administrative, and Related Occupations	1	1.6
Mining and Quarrying including Oil	1	1.6
Teaching and Related Occupations	1	1.6
Machining and Related Occupations	2	3.2
Product Fabricating, Assembling and Repairing Occupations	2	3.2
Religion	2	3.2
Social Sciences and Related Fields	2	3.2
Clerical and Related Occupations	3	4.8
Sports and Recreation	3	4.8
Transport Equipment Operating Occupations	3	4.8
Medicine and Health	9	14.5
Natural Sciences, Engineering and Mathematics	9	14.5
Artistic, Literary, Performing Arts, and Related Occupations	10	16.1
Service	14	22.6
Total	62	100

Table 4.2 lists the frequencies and percentages of actual careers to which the subjects aspired. It is interesting to note the large number of varied careers to which the students aspired. The most frequently aspired-to careers were that of physician at 9.7%, careers in the coast guard, 8.0%, and careers in the armed forces and acting both at 6.4%. R.C.M.P. officer and computer operator, were next with a 4.8% rate for each.

Table 4.2:
Frequency of Career Aspirations

(N=62)

Career	Frequency	Percent(%)
Accountant	1	1.6
Computer System Analyst	1	1.6
Computer Technician	1	1.6
Day-care Worker	1	1.6
Draftsperson	1	1.6
Hunting Guide	1	1.6
Machinist	1	1.6
Nurse	1	1.6
Occupational Therapist	1	1.6
Roustabout	1	1.6
Scientist	1	1.6
Truck driver	1	1.6
Vehicle Mechanic	1	1.6
Welder	1	1.6
X-ray Technician	1	1.6
Athlete	2	3.2
Biologist	2	3.2
Chemical Engineer	2	3.2
Clergyman	2	3.2
Cook	2	3.2
Engineer	2	3.2
Fashion Designer	2	3.2
Lawyer	2	3.2
Musician	2	3.2
Pilot	2	3.2
Writer/Journalist	2	3.2
Computer Operator	3	4.8
R.C.M.P Officer	3	4.8
Actor	4	6.4
Armed Forces	4	6.4
Coast Guard	5	8.0
Physician	6	9.7
Total	62	100

Along with the reporting of the actual occupations aspired to, levels of aspiration, as indicated by levels of both, the General Educational Development (GED) and the Specific Vocational Preparation (SVP), were also reported.

Table 4.3 lists the frequency levels of the GED and SVP associated with the subjects' response to career aspiration.

Table 4.3:
Frequencies of Values for GED and SVP levels for Student Aspirations
(N=62)

GED Value	Frequency	Percent (%)	SVP Value	Frequency	Percent (%)
2	1	1.6	-	-	-
3	20	32.3	3	1	1.6
4	11	17.7	4	10	16.1
5	15	24.2	5	4	6.5
6	15	24.2	6	7	11.3
-	-	-	7	20	32.3
-	-	-	8	18	29.0
-	-	-	9	2	3.2
Total	62	100	Total	62	100

Note that the GED levels can go from one to six while the levels of the SVP can go from one to nine. This study shows that the student aspirations in terms of the GED were spread out from the three level to the six level. The highest percentage was at the three level (32.3%) and the next two highest percentages were at the five and six level where both were recorded at 24.2%. In terms of the SVP measure of aspirations, the highest percentage was at the seven level (32.3%). The next two most frequent responses were at the eight level (29.0%) and the four level (16.1%).

Often students. when asked about what job they would like to do. have more than one possible career choice to which they aspire. In this research. only 12.9% of the respondents listed a second choice. Table 4.4 lists the industrial choices for the second response.

Table 4.4:

(N=8) **Frequency of Industrial Aspirations, Respondents' Second Choice.**

Occupational Group	Frequency	Percent (%)
Machining and Related Occupations	1	12.5
Medicine and Health	1	12.5
Natural Sciences, Engineering and Mathematics	1	12.5
Sales	1	12.5
Service	1	12.5
Social Sciences and Related Fields	1	12.5
Artistic, Literary, Performing Arts, and Related Occupations	2	25.0
Total	8	100

Only one industrial occupational group had more than one response. Two out of the eight respondents. 25.0%. chose careers in artistic. literary. performing arts. and related occupations.

In terms of the actual careers to which the respondents aspired for a second choice. Table 4.5 lists these.

Table 4.5:

(N=8) **Frequency of Second Choice Career Aspirations**

Career	Frequency	Percent(%)
Computer System Analyst	1	12.5
Fashion Model	1	12.5
Nurse	1	12.5
Social Worker	1	12.5
Welder	1	12.5
Actor	2	25.0
Total	8	100

The most popular second choice was that of actor (25.0%). It is interesting to note that three career aspirations appeared for the first time. as possible career choices. Social worker. fashion model and correctional officer all appeared as second choice aspirations. but not as first choice aspirations.

The GED and SVP levels of the second choice aspirations are listed in Table 4.6.

Table 4.6:
Frequencies of Values for GED and SVP levels for Second Choice Student Aspirations
(N=8)

GED Value	Frequency	Percent (%)	SVP Value	Frequency	Percent (%)
3	3	37.5	-	-	-
4	1	12.5	4	1	12.5
5	4	50.0	5	1	12.5
-	-	-	6	1	12.5
-	-	-	7	5	62.5
Total	8	100	Total	8	100

The most common GED value for the second choice career aspiration was five. while the most common SVP value was seven.

In terms of aspirations. the research survey included a question about what would be required to achieve their desired careers. Respondents were able to give more than one response. All responses were recorded and frequencies calculated. Table 4.7 gives the frequencies of the various responses to this question. The coded responses: "obtain a post secondary education": "obtain a university degree": and "obtain a post secondary diploma": can be differentiated by the fact that the first one is not specific. The respondents knew that further education was

required, but did not indicate any particulars. The next two responses are more specific, the requirements are either a university degree or the completion of a diploma program.

Table 4.7:
Student Responses to Question St2 – What Do You Need to do in Order to Have This Perfect Job?
(N=62)

Response	Frequency	Percentage (%)
Hard effort	1	0.9
Natural Ability/Talent	1	0.9
Specialize	1	0.9
Specific High School Courses	1	0.9
To be Healthy and Fit	1	0.9
Take Advanced Classes	2	1.7
Obtain a Post-graduate Degree	3	2.6
To Get Accepted	6	5.1
Obtain Good Marks	8	6.8
Knowledge/Experience	10	8.5
Obtain a Post Secondary Diploma	10	8.5
Obtain a High School Diploma	11	9.4
Obtain a Post Secondary Education	20	17.1
Obtain a University Degree	20	17.1
Training	22	18.8
Total	117	100

The most common response was training, with a percentage of 18.8%. Both responses, obtain a post-secondary education and obtain a university degree, are the next most frequent response and occurred with the same percentage, 17.1%. All the responses that indicated any form of post-secondary education after high school, namely: "obtain a post-secondary education", "obtain a university degree", and "obtain a post secondary diploma", together had a

response percentage of 42.7%.

The next point to be examined was that of career expectations. This was obtained via use of the questionnaire question, coded St3: *being realistic, what do you think you will actually be doing for a career?* As with the aspiration data, it can be looked at using a number of criteria.

The first method of examination was to look at the student expectations in terms of the major industrial groupings reported for expectations. Table 4.8 lists the frequencies of student expectations according to the major occupational categories as set out in the Canadian Classification and Dictionary of Occupations (CCDO) by the Minister of Supply and Service Canada (1990).

Table 4.8:
(N=62) Frequency of Industrial Expectations

Occupational Group	Frequency	Percent (%)
Farming, Horticultural and Animal-Husbandry Occupations	1	1.6
Processing Occupations	1	1.6
Teaching and Related Occupations	1	1.6
Transport Equipment Operating Occupations	1	1.6
Fishing, Trapping and Related Occupations	2	3.2
Machining and Related Occupations	2	3.2
Religion	2	3.2
Social Sciences and Related Fields	2	3.2
Artistic, Literary, Performing Arts, and Related Occupations	3	4.8
Clerical and Related Occupations	3	4.8
Mining and Quarrying including Oil	3	4.8
Product Fabricating, Assembling and Repairing Occupations	3	4.8
Medicine and Health	8	12.9
Service	9	14.5
Undecided	9	14.5
Natural Sciences, Engineering and Mathematics	12	19.4
Total	62	100

The industrial grouping with the highest percentage of responses was in the natural sciences, engineering and mathematics category, with a percentage of 19.4%. The next most frequent response category was in the service industries, with a percentage of 14.5%. It was noted that 14.5%, of the respondents were undecided as to what career they thought they would actually be doing. Of particular interest was the fact that two respondents expected to be working in fishing, trapping or a related occupation. This was in contrast to the occupational aspirations in which there were no responses in that category.

Other industrial occupational categories that were indicated as expectations, but not as aspirations, included farming, horticultural and animal-husbandry occupations, and processing occupations. Industrial occupational categories missing from the expectation responses that were in the aspiration responses included managerial, administrative, and related occupations, as well as, sports and recreation.

Table 4.9 lists the actual careers that the respondents expected to attain. Perhaps the most interesting finding was the fact that, by far, the most frequent response to the question regarding career expectations was that of undecided which had a response percentage of 14.5%. Thus, students had little problem aspiring to a career but they had some problems with actual career choice. The next most frequently expected career was that of engineer with a percentage of 8.1%. This category included, mechanical, civil, and nautical. It did not include

chemical engineer.

Table 4.9:
(N=62) Frequency of Career Expectations

Career	Frequency	Percent(%)
Animal Attendant	1	1.6
Biologist	1	1.6
Boat Captain	1	1.6
Coast Guard	1	1.6
Correctional Officer	1	1.6
Daycare worker	1	1.6
Draftsperson	1	1.6
Fisherperson	1	1.6
Fishplant Worker	1	1.6
Machinist	1	1.6
Medical Laboratory Technician	1	1.6
Mortician	1	1.6
Musician	1	1.6
Nursing Assistant	1	1.6
Optometrist	1	1.6
Pharmacist	1	1.6
Physician	1	1.6
R.C.M.P Officer	1	1.6
Truck Driver	1	1.6
Vehicle Mechanic	1	1.6
Welder	1	1.6
Chemical Engineer	2	3.2
Clergyman	2	3.2
Computer Technician	2	3.2
Cook	2	3.2
Journalist	2	3.2
Social Worker	2	3.2
Armed Forces	3	4.8
Computer Operator	3	4.8
Computer System Analyst	3	4.8
Nurse	3	4.8
Roustabout	3	4.8
Engineer	5	8.1
Undecided	9	14.5
Total	62	100

When these were included, the response percentage was raised to 11.3%. Expectations of careers as: members of the armed forces, computer operators,

computer systems analysts, nurses, and oil rig roustabouts were the next most frequent response to career expectations with a response percentage of 4.8% each. Another finding worth emphasizing involved the number of response expectations for careers in the traditional fishing industries. Only three individuals expected these traditional careers. One individual expected to be a fisherperson, one expected to be a fishplant worker and one expected to be a fishing captain.

The GED and SVP levels of the expected careers were obtained and the results can be found in Table 4.10.

Table 4.10:
Frequencies of Values for GED and SVP levels for Student Expectations
(N=62)

GED Value	Frequency	Percent (%)	SVP Value	Frequency	Percent (%)
2	5	8.1	2	1	1.6
3	13	21.0	3	2	3.2
4	13	21.0	4	7	11.3
5	15	24.2	5	5	8.1
6	7	11.3	6	8	12.9
-	-	-	7	16	25.8
-	-	-	8	14	22.6
-	-	-	9	-	-
Missing	9	14.5	Missing	9	14.5
Total	62	100	Total	62	100

The GED and SVP levels indicated the aspirational level for students' career expectations. For the GED, the highest percentage was at the five level (24.2%) and the next two highest percentages were at the three and four level where both were recorded at 21.0%. In terms of the SVP measure, the highest percentage was at the seven level (25.8%). The next two most frequent responses

were at the eight level (22.6%) and the six level (12.9%). Note that the "nine missing" refers to the nine individuals who were undecided as to career expectations and were, therefore, not assigned either GED or SVP values.

When students were asked to give the jobs that they expected to be doing, there was often more than one possible answer. In this research, only ten of the sixty-two, or 16.1% of the respondents listed a second choice. Table 4.11 lists the industrial occupational expectations for the second responses. In this instance artistic, clerical, and medical were the industrial occupations which were the most frequently expected at 20.0% each.

Table 4.11:
Frequency of Industrial Occupational Expectations: Respondents' Second Choice.
(N=10)

Occupational Group	Frequency	Percent (%)
Natural Sciences, Engineering and Mathematics	1	10.0
Processing Occupations	1	10.0
Service	1	10.0
Transport Equipment Operating Occupations	1	10.0
Artistic, Literary, Performing Arts, and Related Occupations	2	20.0
Clerical and Related Occupations	2	20.0
Medicine and Health	2	20.0
Total	10	100

In terms of the actual careers expected for the second choice, Table 4.12 lists these. Careers as actors and computer operator were the most common second response for career expectations. Both had a response rate of 20.0%. It was interesting to note that another individual expected to obtain employment as a fishplant worker. This raised the total to four the number of individuals who

expected a career in the traditional fishery, including first and second expectations. Thus, the percentage of the graduating class expecting a fishery-related career was 6.5%. This number was quite low, as would be expected given the precarious state of the Newfoundland fishery.

Table 4.12:
(N=10) Frequency of Second Choice Career Expectations

Career	Frequency	Percent(%)
Fishplant Worker	1	10.0
Marine Engineer	1	10.0
Medical Laboratory Technician	1	10.0
Ship's Captain	1	10.0
Veterinary Assistant	1	10.0
Waitress	1	10.0
Actor	2	20.0
Computer Operator	2	20.0
Total	10	100

The GED and SVP values are listed in Table 4.13.

Table 4.13:
Frequencies of Values for GED and SVP levels for Second Choice Career Expectations
(N=10)

GED Value	Frequency	Percent (%)	SVP Value	Frequency	Percent (%)
2	2	20.0	2	2	20.0
3	1	10.0	3	1	10.0
4	3	30.0	4	-	-
5	3	30.0	5	1	10.0
6	1	10.0	6	2	20.0
-	-	-	7	2	20.0
-	-	-	8	2	20.0
Total	8	100	Total	8	100

The most common GED values were at the four and five levels (30.0%) which was a moderate-to-high aspiration level for the second choice expectation.

In terms of the SVP, the most common values were at the two, six, seven and eight levels (20.0%). While the six, seven, and eight levels were moderate-to-high aspirations for career expectations the two level was quite low.

As part of the research into student aspirations and expectations, it was important to gain knowledge about the students' plans for the immediate future. In this instance, the questionnaire question coded St4 asked about their plans for the end of their school year or the beginning of the next school year. Table 4.14 lists the frequency and percentages of the students' responses to question St4.

Table 4.14:
Student Responses to Question St4 – What are you going to do at the end of this school year or the beginning of the next school year?
(N=62)

Response	Frequency	Percentage (%)
Undecided	2	3.2
Work	12	19.4
Return to High School	13	21.0
Go to College	16	25.8
Go to University	19	30.6
Total	62	100

The largest percentage of students responded that they would be attending university (30.6%) and the next highest percentage responded that they would be attending some form of college (25.8%). Together the response to attend some form of post-secondary institution was 56.4%. For those who responded that they were going to return to high school, many were doing this to improve their marks, to attain grade levels sufficient for entrance into a post-secondary institution.

The above responses were obtained from the questionnaire, which was

administered in late April 1998. As a comparison, a research question was asked at the school regarding last year's graduates. The school administrators, teachers, friends of the students and parents were questioned as to the status of last year's graduates. From those responses Table 4.15 was created.

Table 4.15:
(N=62) Current Educational and/or Career Status of Respondents.

Status	Frequency	Percentage (%)
Working	4	6.5%
Doing Nothing	8	12.9%
Attending College	11	17.7%
Attending University	19	30.6%
Returned to High School	19	30.6%
Total	62	100

A comparison of what the students thought they would be doing and what they were actually doing elicits some interesting results. Of those students who said that they planned to go to university, (30.6%) the same percentage of students were attending university. For college attendants, the numbers are slightly different. While 25.8% of the students said that they were going to attend college, only 17.7% were enrolled in college programs. While 21.0% of respondents said that they would be returning to high school in the fall either to upgrade marks or to complete the high school program, in actuality 30.6% of the students returned to level IV. This was a very high percentage and should be of concern to administrators, guidance counselors, teachers, parents and students alike. Presumably, this increase reflected those students who did less well than they had

predicted they would and had to return to level IV.

Another area of interest is the comparison of those who planned to enter the workforce (19.4%) and those that actually did (6.5%). Among those few, only 3.2% actually found full time employment and they had to leave Newfoundland to gain employment. Included in the status category "doing nothing" (12.9%) were students seeking employment and/or waiting to gain acceptance into post-secondary programs.

With respect to the major research question regarding career aspirations and career expectations analysis comparing these variables was conducted. A crosstabulation comparing industrial categories for both career aspirations and career expectations was carried out (see Table 4.16). When examining Table 4.16, a number of points stood out. Those major industrial groups that were consistent for both career aspirations and career expectations included: religion, teaching, clerical, mining, quarrying and oil and gas, machining, and product fabricating, all of which are relatively lower level industrial groups, arguably with the exception of teaching and religion. Therefore, it would seem appropriate to aspire to and expect these careers. In terms of some higher level major industrial groups, such as science, engineering and mathematics and medicine and health, there were some differing results. In the case of science, engineering and mathematics, 88.9% of those who aspired to this industrial group also expected to be working in this area. The other 11.1% expected to be working in a service industry. For

Table 4.16:

(N=62) **Major Industrial Groups Career Aspirations by Career Expectations**

		Aspirations						
		Managerial & Administrative	Science, Engineering & Math	Social Sciences	Religion	Teaching	Medicine & Health	Artistic, Literary & Performing Arts
Expectations								
Science, Engineering & Math	Count		8*					
	% within aspiration		88.9%					
Social Sciences	Count						1	1
	% within aspiration						11.1%	10.0%
Religion	Count				2*			
	% within aspiration				100.0%			
Teaching	Count					1*		
	% within aspiration					100.0%		
Medicine & Health	Count						5*	3
	% within aspiration						55.6%	30.0%
Artistic, Literary and Performing Arts	Count							3*
	% within aspiration							30.0%
Clerical Occupations	Count							
	% within aspiration							
Service Occupations	Count		1	1				1
	% within aspiration		11.1%	50.0%				10.0%
Farming, Horticultural and Animal Husbandry	Count							
	% within aspiration							
Fishing, Trapping & Related Occupations	Count							
	% within aspiration							
Mining, Quarrying & Oil and Gas Occupations	Count							
	% within aspiration							
Processing Occupations	Count						1	
	% within aspiration						11.1%	
Machining and Related Occupations	Count							
	% within aspiration							
Product Fabricating, Assembling & Repairing	Count							
	% within aspiration							
Undecided	Count	1		1			2	2
	% within aspiration	100.0%		50.0%			22.2%	20.0%
Transport Equipment Operating Occupations	Count							
	% within aspiration							
Total	Count	1	9	2	2	1	9	10
	% within aspiration	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

table: 4.16 continued

Table 4.16 continued:

(N=62) **Major Industrial Groups Career Aspirations by Career Expectations**

		Aspirations							
		Sport & Recreation	Clerical	Service	Mining, Quarrying & Oil and Gas	Machining & Related	Product Fabricating, Assembling & Repairing	Transport Equipment Operating	Total
Expectations									
Science, Engineering & Math	Count	1		2				1	12
	% within aspiration	33.3%		14.3%				33.3%	19.4%
Social Sciences	Count								2
	% within aspiration								3.2%
Religion	Count								2
	% within aspiration								3.2%
Teaching	Count								1
	% within aspiration								1.6%
Medicine & Health	Count								8
	% within aspiration								12.9%
Artistic, Literary and Performing Arts	Count								3
	% within aspiration								4.8%
Clerical	Count		3*						3
	% within aspiration		100.0%						4.8%
Service	Count	1		5*					9
	% within aspiration	33.3%		35.7%					14.5%
Farming, Horticultural & Animal Husbandry	Count			1					1
	% within aspiration			7.1%					1.6%
Fishing, Trapping & Related	Count			2					2
	% within aspiration			14.3%					3.2%
Mining, Quarrying & Oil and Gas	Count			2	1*				3
	% within aspiration			14.3%	100.0%				4.8%
Processing	Count								1
	% within aspiration								1.6%
Machining and Related	Count					2*			2
	% within aspiration					100.0%			3.2%
Product Fabricating, Assembling & Repairing	Count	1					2*		3
	% within aspiration	33.3%					100.0%		4.8%
Undecided	Count			2				1	9
	% within aspiration			14.3%				33.3%	14.5%
Transport Equipment Operating	Count							1*	1
	% within aspiration							33.3%	1.6%
Total	Count	3	3	14	1	2	2	3	62
	% within aspiration	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

medicine and health, only 55.6% of those students aspiring to these occupations were expecting to be working in these fields. The other areas expected, included: service (11.1%), processing (11.1%), and undecided (22.2%). This can be explained by the relatively high numbers of individuals aspiring to such careers as medical doctors, but very few actually expecting to be employed as such. Those individuals both aspiring to and expecting careers in other medical areas such as nursing keep the percentage high in this area. The numbers with the * symbol represent the count and percentage of occupations that correspond for both aspirations and expectations. When these were examined, the percentage of aspirations and expectations of major industrial groups was 53.2%.

When the number of different careers listed under the aspirations versus the expectations (see Tables 4.2 and 4.9) were compared, no differences were found. Students aspired to thirty-three different careers while the number of expected careers was also thirty-three. These results were for the first choice responses to both aspirations and expectations. This was interesting considering the fact that nine individuals were undecided about career expectations. Presumably, if those individuals had listed career expectations, the number of overall careers for expectations would have been greater than for aspirations. However, the actual jobs to which students aspired, were often different from those expected. While a crosstabulation of actual career aspirations versus expectations would be too

cumbersome to display, the findings indicate twenty-eight of the sixty-two students in the study, or 45.2%, had matching career aspirations and expectations.

These results differed slightly from those of the GED and SVP for aspirations (see Table 4.3) and expectations (see Table 4.10). A Spearman's rho correlation was carried out to determine the significance of the relationship between the GED for aspirations and the GED for expectations (see Table 4.17).

Table 4.17:
(N=53) Correlation between the GED Values for Aspirations and Expectations

			GED Expectations
Spearman's rho	GED Aspirations	Correlation Coefficient	.585**
		Sig. (2-tailed)	.000
		N	53

** Correlation is significant at the .01 level (2-tailed)

From this, it was seen that there was a strong correlation between the GED's for aspirations and expectations. As well, it was highly significant; therefore, we accepted the results.

Mean scores were compared for GED aspirations and expectations (see Table 4.18).

Table 4.18:
Means and Standard Deviations for GED Aspirations and Expectations

	Mean	N	Std. Deviation	Std. Error Mean
GED Aspirations	4.30	53	1.23	.17
GED Expectations	4.11	53	1.20	.17

There was a difference between the mean value for the GED of aspirations and expectations, 4.30 and 4.11 respectively. When a paired sample test was

carried out the results showed no significant difference (t =1.237, df = 52, p =.222). A Spearman's rho correlation was also carried out to determine the significance of the relationship between the SVP for aspirations and the SVP for expectations (see Table 4.19).

Table 4.19:
(N=53) Correlation between the SVP Values for Aspirations and Expectations

			SVP Expectations
Spearman's rho	SVP Aspirations	Correlation Coefficient	.622**
		Sig. (2-tailed)	.000
		N	53

** Correlation is significant at the .01 level (2-tailed)

These data also showed a strong correlation between the SVP's for aspirations and expectations. Again, it was highly significant, therefore we accepted the results. Together, the results from these two correlations indicated that both career aspirations and career expectations were in line with each other in terms of overall levels of aspiration.

Mean scores were compared for SVP aspirations and expectations (see Table 4.20).

Table 4.20:
Means and Standard Deviations for SVP Aspirations and Expectations

	Mean	N	Std. Deviation	Std. Error Mean
SVP Aspirations	6.49	53	1.53	.21
SVP Expectations	6.28	53	1.61	.22

Again, there was a difference between the mean value for the SVP of aspirations and expectations, 6.49 and 6.28 respectively. When a paired sample

test was carried out the results showed no significant difference (t =1.045, df = 52, p =.301).

This concludes the analyses of the descriptive statistics on educational and career expectations and aspirations for this study. Chapter 5 includes the analyses of those research questions dealing with those factors that affect aspirations and expectations and the relationships between these factors.

CHAPTER 5

Answers to Research Questions

The first subsidiary question to be examined statistically, concerning curriculum issues was: *how does academic achievement in science relate to both career aspirations and expectations?* Spearman's rho correlations were carried out to determine the relationship between the students' average marks in science courses and level of career aspirations as measured by the GED and SVP associated with the students' aspired-to careers. Table 5.1 lists the correlations between the GED for aspirations and average marks in the various science courses, as well as, the average marks in all science courses combined and the average marks in either academic or nonacademic science courses.

Table 5.1
Correlation between GED Aspirations and Science Course Averages, Total Science Credits, Academic Science Credits, and Nonacademic Science Credits

			Biology 2201	Chemistry 2202	Physics 2204	Physical Science 2205	Science Tech. & Society 2206
Spearman's rho	GED Aspirations	Correlation Coefficient	.465**	.507**	.550*	.520	.141
		Sig. (2-tailed)	.001	.000	.022	.101	.466
		N	52	48	17	11	29

Biology 3201	Chemistry 3202	Physics 3204	Environmental Science 3205	Sccredit	Academic	Nonacademic
.589**	.313	.523**	.062	.520**	.496**	-.389**
.000	.120	.007	.841	.000	.000	.002
42	26	25	13	62	62	62

** Correlation is significant at the .01 level (2-tailed)
* Correlation is significant at the .05 level (2-tailed)

The heading sccredits refers to the cumulative average obtained for all

science courses taken. The academic and nonacademic headings refer to the average marks for those courses considered either academic or nonacademic. For the purpose of this research, the courses considered academic include courses in: biology, chemistry and physics, while those considered nonacademic include: physical science, science-technology-and-society, and environmental science. When examining these correlations a number of interesting results appeared. When correlating the GED for aspirations and science marks, biology 3201, had the highest correlation of .465, significant at the .01 level, thus, these results are accepted. We conclude that high marks in biology 3201 are correlated to high GED levels and therefore too high career aspirations. Similar findings occurred for other academic science courses including: physics 2204 with the second highest correlation coefficient of .550, significant at the .05 level; physics 3204 with a correlation coefficient of .523, significant at the .01 level; chemistry 2202 with a correlation coefficient of .507, significant at the .01 level; and biology 2201 with a correlation coefficient of .465, significant at the .01 level. There was one academic science course, chemistry 3202, which had a lower correlation coefficient of .313, and a significance level of .120, therefore this result was not significant. Overall, it can be said that there was a positive correlation between achievement in academic science courses and higher levels of career aspirations as indicated by high GED levels. This was further supported, with the findings under the academic heading, in which the average mark of all academic science courses

was correlated to the GED levels for career aspirations. The correlation coefficient was reported as .496, and a significance level of .000, highly significant.

Conversely, when examining the results for the nonacademic courses, a negative correlation was found. While none of the nonacademic courses individually, had significant results, the grouped nonacademic results were significant. Under the nonacademic heading, the correlation coefficient was -.389, significant at the .01 level. This negative number indicated that enrolling and doing well in the nonacademic science courses was correlated to lower levels of career aspiration as indicated by the GED level. When all science courses taken by the students were accounted for, a strong correlation was found. The heading sccredit had a correlation coefficient of .520, significant at the .01 level. Thus, it was concluded that there was a positive correlation between academic achievement and career aspirations as measured by the GED.

Similar results were found for the Spearman's rho correlation between the students' average marks in science courses and the level of career aspiration as measured by the SVP level associated with the respondents' aspired-to careers. Table 5.2 lists the correlation between the SVP for aspirations and average marks in the various science courses, as well as, the average marks in all science courses combined and the average marks in either academic or nonacademic science courses.

When examining these correlations. a number of interesting findings appeared. The strongest correlation was found between the SVP and physics 2201 with a correlation coefficient of .585. significant at the .05 level. thus. these results were accepted.

Table 5.2:
Correlation between SVP Aspirations and Science Course Averages, Total Science Credits, Academic Science Credits, and Nonacademic Science Credits

			Biology 2201	Chemistry 2202	Physics 2204	Physical Science 2205	Science Tech. & Society 2206
Superman's rho	SVP Aspirations	Correlation Coefficient	.424**	.499**	.585*	.320	-.042
		Sig. (2-tailed)	.002	.000	.014	.337	.829
		N	52	48	17	11	29

Biology 3201	Chemistry 3202	Physics 3204	Environmental Science 3205	Sccredit	Academic	Nonacademic
.526**	.302	.530**	-.029	.390**	.353**	-.223
.000	.133	.006	.925	.002	.005	.081
42	26	25	13	62	62	62

** Correlation is significant at the 01 level (2-tailed)
* Correlation is significant at the 05 level (2-tailed)

Again. it was concluded that high marks in physics 2201 were correlated with high SVP levels and with high career aspirations. As with the GED. similar findings occurred for the correlation of SVP and other most other academic science courses. These included: physics 3204 with the second strongest correlation coefficient of .530. significant at the .01 level; biology 3201 with a correlation coefficient of .526. significant at the .01 level; chemistry 2202 with a correlation coefficient of .499. significant at the .01 level; and biology 2201 with a

correlation coefficient of .424, significant at the .01 level. Again, the correlation coefficient for chemistry 3202 was not high, nor was it significant. Examination of the results of the correlation under the academic heading supports the claim that there was an overall positive correlation between achievement in academic science courses and career aspirations as measured by the SVP levels. The correlation coefficient for the academic heading was .353, significant at the .01 level.

While there was a significant negative correlation between the GED and the nonacademic courses, this was not the case for the SVP and the nonacademic courses. There was a negative correlation of -.223, however it had a significance level of .081 and therefore was not significant.

In terms of the sccredits heading for the average of all science courses taken by the students, the correlation coefficient was .390, significant at the .01 level. It was concluded that there was a positive correlation between academic achievement in science courses and levels of career aspiration as measured by the SVP levels.

Together, the results of the correlational analysis between academic achievement in science and career aspirations, as measured by both the GED and SVP levels, indicated the positive relationship between the two.

As with students' career aspirations, Spearman's rho correlations were carried out comparing GED and SVP levels for career expectations and academic achievement in science courses. The correlations between the aspirational levels

of students' career expectations and academic achievement in science courses were being examined (see Table 5.3).

Table 5.3:
Correlation between GED Expectations and Science Course Averages, Total Science Credits, Academic Science Credits, and Nonacademic Science Credits

			Biology 2201	Chemistry 2202	Physics 2204	Physical Science 2205	Science Tech. & Society 2206
Spearman's rho	GED Expectations	Correlation Coefficient	.394**	.568**	-.011	.564	.350
		Sig. (2-tailed)	.008	.000	.971	.089	.094
		N	44	41	13	10	24

Biology 3201	Chemistry 3202	Physics 3204	Environmental Science 3205	Scredit	Academic	Nonacademic
.643**	.229	.391	.172	.477**	.437**	-.289*
000	.305	072	.613	000	.001	.036
35	22	22	11	53	53	53

** Correlation is significant at the .01 level (2-tailed)
* Correlation is significant at the .05 level (2-tailed)

When these correlations were examined, a number of interesting results appeared. The strongest correlation was between the GED for expectations and biology 3201, with a correlation coefficient of .643, significant at the .01 level. It was conclude that high marks in biology 3201 were positively correlated with high aspirations as measured by the GED levels for career expectations. Similar results were found when comparing the GED aspiration levels for career expectations with other academic science courses. These included chemistry 2202 with a correlation coefficient of .568, significant at the .01 level, and biology 2201 with a correlation coefficient of .394, significant at the .01 level. The number of

academic science courses for which correlations were both strong and significant was lower for the GED of career expectations than for the GED of career aspirations. In this case three academic science courses: physics 2204, physics 3204 and chemistry 3202, were not strongly nor significantly correlated with aspirations as measured by the GED levels of students' career expectations. However, when the results under the academic heading were examined, there was a positive correlation with a value of .437, significant at the .01 level. It was concluded that for academic science courses there was a significant positive correlation between this and aspirations, as measured by the GED levels for career expectations. Conversely, when the results for the nonacademic courses were examined, a negative correlation was found. While none of the nonacademic courses individually had significant results, the grouped nonacademic results were significant. Under the nonacademic heading, the correlation coefficient was -.289, significant at the .05 level. This negative number indicated that enrolling and doing well in the nonacademic science courses was correlated to lower levels of aspiration as indicated by the GED level for career expectations. When the average for the total number of science courses was correlated with the GED for expectations, under the heading sccredits, the correlation coefficient was .477, significant at the .01 level. Therefore, it was concluded that there was a positive relationship between academic achievement and aspiration as measured by the GED for career expectations.

Similar results are found for the Spearman's rho correlation between the students' average marks in science courses and the level of career aspiration as measured by the SVP level associated with the respondents' expected careers. Table 5.4 lists the correlation between the aspirations, as measured by the SVP levels for career expectations, and the average marks in the various science courses, as well as, the average marks in all science courses combined and the average marks in either academic or nonacademic science courses.

Table 5.4:
Correlation between SVP Expectations and Science Course Averages, Total Science Credits, Academic Science Credits, and Nonacademic Science Credits

			Biology 2201	Chemistry 2202	Physics 2204	Physical Science 2205	Science Tech. & Society 2206
Spearman's rho	GED Expectations	Correlation Coefficient	.413**	.551**	.482	.485	.223
		Sig. (2-tailed)	.005	.000	.095	.156	.294
		N	44	41	13	10	24

Biology 3201	Chemistry 3202	Physics 3204	Environmental Science 3205	Scredit	Academic	Nonacademic
.575**	.336	.312	-.126	.367**	.389**	-.248
.000	.126	.157	.711	.007	.004	.073
35	22	22	11	53	53	53

** Correlation is significant at the .01 level (2-tailed)
* Correlation is significant at the .05 level (2-tailed)

When examining these data a number of interesting results were found. The strongest correlation appeared between the level of aspiration as measured by the SVP level for career expectations and biology 3201 with a correlation coefficient of .575, significant at the .01 level. Therefore, these results were accepted. It was concluded that high grades in biology 3201 were related to high

levels of aspirations as measured by the SVP levels for career expectations. It was interesting to note that of the four Spearman's rho correlations administered, biology 3201 had the strongest correlation for three of them.

The other academic courses that yielded positive, significant results included: chemistry 2202 with a correlation coefficient of .551, significant at the .01 level; and biology 2201 with a correlation coefficient of .413, significant at the .01 level. Another interesting finding parallels that of the GED's. That was the number of academic science courses for which correlations are both strong and significant was lower for the SVP of career expectations than for the SVP of career aspirations. Physics 2204, physics 3204 and chemistry 3202 were not strongly nor significantly correlated with aspirations as measured by the SVP levels for career expectations. As with the GED results for expectations, when the results under the academic heading were examined, a positive correlation coefficient of .389, was obtained which was significant at the .01 level. This supports the claim of a positive relationship between achievement in academic science courses and career expectations as measured by the SVP levels.

While there was not a significant correlation between the SVP for expectations and the nonacademic science courses, there was, however, a negative correlation of -.248, with a significance level of .073. This only suggests support for the previous findings regarding the nonacademic science courses, i.e., that high student marks in the nonacademic science courses were related to lower levels of

career expectations.

In terms of the combined average of all the science courses taken by the students, given under the heading sccredit, there was a moderately strong correlation, with a correlation coefficient of .367, significant at the .01 level. Again it was concluded that there was a positive correlation between academic achievement in science courses and levels of aspirations as measured by the SVP for career expectations.

When the correlational analyses involving academic achievement, GED's, and SVP's, were looked at in conjunction with one another it was concluded that achievement in academic science courses was related to both career aspirations and career expectations. Thus, the aspirational level of career aspirations and career expectations, as measured by the GED and the SVP levels, were positively related to overall student performance in science courses. This was most evident in academic science courses.

The second subsidiary question to be examined statistically, with regards to curriculum issues, is: *how do students make use of school-based resources to obtain career information, and is there a relationship between the use of this information and career/educational aspirations and expectations?* A number of survey items were used to examine this question. Descriptive statistics, crosstabulations, and chi-square tests were used to examine the various aspects of

the above-mentioned question.

The first survey item involved the curriculum aspect of course offerings. When examining the role of course choice in student aspirations and expectations, it is informative to look at the reasons that students give for picking particular courses. The research survey included a question about what types of things influenced their decision to take one course over another. This question was coded Sch1. Respondents were able to give more than one response. All responses were recorded and frequencies tabulated. Table 5.5 lists the reasons given by the students for particular course choices.

Table 5.5:
Student Responses to Question Sch1 –What Types of Things Influenced Your Decision to Take One Course Over Another?
(N=62)

Response	Frequency	Percentage (%)
To Satisfy My Parents	1	1.1
To Keep My Options Open	1	1.1
I Need the Credits	1	1.1
I Do Well in This Area	2	2.1
There are Friends in the Course	4	4.3
Advised by Family	4	4.3
To Challenge Me	4	4.3
The Person Teaching the Course	4	4.3
Advised by School	5	5.3
The Level of Difficulty	7	7.4
It is Needed for My Chosen Career	9	9.6
To Help with Future Plans	9	9.6
It Will Help with College or University	17	18.1
Interest	26	27.6
Total	94	100

As can be seen from Table 5.5, the main reason (27.6%) that students chose

a particular course over another was because of interest in that course or course area. The next most frequent response, with a percentage of 18.1%, was that it would help with college or university. The next two reasons both have a percentage response rate of 9.6%, "to help with future plans", and "it is needed for my chosen career". Together these three responses, along with the response about keeping options open, indicate some form of thought about educational and/or career aspirations and expectations. Combined they yielded a response percentage of 38.3%. Thus, slightly over one third of the graduating class considered future career aspirations and expectations when making course choices.

The next survey item that dealt with curriculum issues was the question coded Sch2. This question asked the subject to comment on whether or not any courses that they had done, had helped them to decide on future educational or career plans. For this question, the positive response rate, indicating that one or more courses had helped with future plans in some way, was 61.3%. The negative response rate, indicating that no courses in school had helped with plans, was 38.7%. If a positive response was given, the students were asked to give a brief explanation of how the course, or courses, had helped their future plans. This question was coded Sch2a. The subjects were able to give multiple responses. Table 5.6 lists the responses to the question: how have any courses that you have done helped in future career plans?

Table 5.6:
Student Responses to Question Sch2a –How Have Any Courses That You Have Done Helped in Future Career Plans?
(N=46)

Response	Frequency	Percentage (%)
Allowed Me to Gain Skills	1	2.3
Gave Me Experience with Business	2	4.3
Allowed Me to See What Things I'm Not Interested in	3	6.5
Gave Me Exposure to Careers	8	17.4
Doing Well in this Area May Lead to a Career	9	19.6
Created an Interest Which May Lead to a Career	23	50.0
Total	46	100

The most common response (50.0%) was that it created an interest in a subject, which could lead to a career in that particular area. The second most common response (19.6%) was that doing well in a particular subject, generally indicated an aptitude for that area, which may be able to be developed into a career. For example, one male student said that he did quite well in physics and from that, he concluded that he would probably enter a university engineering program.

In the following analyses from page 107 to 173 there are results discussed which are not statistically significant but do show trends in a consistent direction which may have yielded significant results with a larger sample size.

A crosstabulation was conducted to examine the relationship between GED for career aspirations and the positive or negative response to the question regarding whether any courses had been of assistance in helping students plan

their futures. Table 5.7 shows this crosstabulation.

Table 5.7:
Helpfulness of Course Offerings by GED for Career Aspirations

	Yes		No	
GED Aspirations	Frequency	Percent	Frequency	Percent
1	0	0	0	0
2	0	0	1	4.2
3	8	21.1	12	50.0
4	7	18.4	4	16.7
5	11	28.9	4	16.7
6	12	31.6	3	12.5
Total	38	100.0	24	100.0

Note: $\chi^2 = 8.56$, $p > .05$

The significance level for this crosstabulation was .073, and therefore was not significant. The table does show an interesting trend when the GED levels were compared between the yes and no responses. For the yes response, percentages increase for higher GED levels, while for the no response, the greater percentages were at the lower end of the GED levels. A full 78.9% of those students who indicated that courses did help with future planning of careers had GED levels of 4, 5, or 6. This compares with 45.9% for those students who indicated that courses did not help with future planning of careers. In addition, for those students who indicated that courses did not help with future planning of careers, 54.2% had GED levels of 1, 2, or 3. This compares with 21.1% for those students who indicated that courses did help with future planning of careers. It appears that there was an increased possibility of higher levels of aspirations, as measured by the GED for career aspirations, for those students who found that courses did help in future plans. A similar crosstabulation was conducted to

examine the relationship between SVP for career aspirations and the positive or negative response to the question regarding whether any courses had been of assistance in helping students plan their futures. Table 5.8 shows this crosstabulation.

Table 5.8:
Helpfulness of Course Offerings by SVP for Career Aspirations

	Yes		No	
SVP Aspirations	Frequency	Percent	Frequency	Percent
3	0	0	1	4.2
4	5	13.2	5	20.8
5	1	2.6	3	12.5
6	5	13.2	2	8.3
7	12	31.6	8	33.3
8	13	34.2	5	20.8
9	2	5.3	0	0
Total	38	100.0	24	100.0

Note: $\chi^2 = 6.83$, $p > .05$

The significance level for this crosstabulation was .337, and therefore, was not significant. Again, a similar trend was found with these data. When the top three levels of the SVP scales were examined for the yes response, a percentage of 71.1% was obtained, however, for the no response a percentage of only 54.1% was obtained. For the lower three levels of the SVP scales, which were examined for the yes response, a percentage of 15.8% was obtained. For the no response, a percentage of 37.5% was found. Again, it appears that there was an increased possibility of higher levels of aspirations, this time, as measured by the SVP for career aspirations, for those students who found that courses did help in future plans. A crosstabulation was conducted to examine the relationship between GED

for career expectations and the positive or negative response to the question regarding whether or not any courses had been of assistance in helping students plan their futures. Table 5.9 shows this crosstabulation.

Table 5.9:
Helpfulness of Course Offerings by GED for Career Expectations

	Yes		No	
GED Expectations	Frequency	Percent	Frequency	Percent
1	0	0	0	0
2	2	5.9	3	15.8
3	6	17.6	7	36.8
4	9	26.5	4	21.1
5	12	35.3	3	15.8
6	5	14.7	2	10.5
Total	34	100.0	19	100.0

Note: $\chi^2 = 5.04$, $p > .05$

The significance level for this crosstabulation was .283, and therefore, was not significant. Again, a trend was found when the GED levels were compared between the yes and no responses. For the yes response, percentages increase for higher GED levels, while for the no response, the greater percentages were at the lower end of the GED levels. A full 76.5% of those students who indicated that courses did help with future planning of careers had GED levels of 4, 5, or 6. This compares with 47.4% for those students who indicated that courses did not help with future planning of careers. In addition, for those students who indicated that courses did not help with future planning of careers, 52.6% had GED levels of 1, 2, or 3. This compares with 23.5% for those students who indicated that courses did help with future planning of careers. Again, it appears that there was an increased possibility of higher levels of aspirations, as measured by the GED for

career expectations, for those students who found that courses did help in future plans.

A similar crosstabulation was conducted to examine the relationship between SVP for career expectations and the positive or negative response to the question regarding whether or not any courses had been of assistance in helping students plan their futures. Table 5.10 shows this crosstabulation.

Table 5.10:
Helpfulness of Course Offerings by SVP for Career Expectations

	Yes		No	
SVP Expectations	Frequency	Percent	Frequency	Percent
2	1	2.9	0	0
3	0	0	2	10.5
4	4	11.8	3	15.8
5	2	5.9	3	15.8
6	7	20.6	1	5.3
7	12	35.3	4	21.1
8	8	23.5	6	31.6
Total	34	100.0	19	100.0

Note: $\chi^2 = 8.57$, $p > .05$

The significance level for this crosstabulation was .199, and therefore, was not significant. Again, a similar trend was found with these data. When the top three levels of the SVP scales were examined for the yes response, a percentage of 79.4% was obtained, however, for the no response a percentage of only 58.0% was obtained. For the lower three levels of the SVP scales, which were examined for the yes response, a percentage of 14.7% was obtained. For the no response, a percentage of 26.3% was found. Again, it appears that there was an increased possibility of higher levels of aspirations, this time, as measured by the SVP for career expectations, for those students who found that courses did help in future

plans.

While no conclusions were made based on these data, as a result of a lack of significance, the trends for both career aspirations and career expectations suggested that there may be a positive relationship between students finding courses helpful and levels of aspirations as measured by GED's and SVP's.

The next area to be examined under the curriculum research question was the influence of extra-curricular activities on career aspirations and career expectations. A crosstabulation was undertaken to examine the relationship between the GED levels for career aspirations and participation in extra-curricular activities (see Table 5.11).

Table 5.11:
Participation in Extra-Curricular Activities by GED for Career Aspirations

	Yes		No	
GED Expectations	Frequency	Percent	Frequency	Percent
1	0	0	0	0
2	0	0	1	3.4
3	9	27.3	11	37.9
4	6	18.2	5	17.2
5	9	27.3	6	20.7
6	9	27.3	6	20.7
Total	33	53.2	29	46.8

Note: $\chi^2 = 2.24$, $p > .05$

While the results of this crosstabulation were not significant, a trend was seen which is worth some discussion. This trend was found when the GED levels were compared between the yes and no responses. For the yes response, percentages increased for higher GED levels, as with the no response. There was

a higher percentage for the yes response over the no response. For the GED levels of 4, 5, and 6, 72.8% of those students indicated that they were involved in extra-curricular activities. This compared with 58.6% for those students who indicated that they were not involved in extra-curricular activities. In addition, for those students who indicated that they were not involved in extra-curricular activities, 41.3% had GED levels of 1, 2, and 3. This compares with 27.3% for those students who indicated that they were involved in extra-curricular activities. It appears that there was an increased possibility of higher levels of aspirations, as measured by the GED for career aspirations, for those students who were involved in extra-curricular activities.

A similar crosstabulation was conducted to examine the relationship between SVP for career expectations and the positive or negative response to the question regarding whether students were involved in extra-curricular activities. Table 5.12 shows this crosstabulation.

Table 5.12:
Participation in Extra-Curricular Activities by SVP for Career Aspirations

	Yes		No	
SVP Aspirations	Frequency	Percent	Frequency	Percent
3	0	0	1	3.4
4	4	12.1	6	20.7
5	2	6.1	2	6.9
6	4	12.1	3	10.3
7	10	30.3	10	34.5
8	11	33.3	7	24.1
9	2	6.1	0	0
Total	33	53.2	29	46.8

Note: $\chi^2 = 4.19$, $p > .05$

The significance level for this crosstabulation was .651, and therefore, was not significant. Again, a similar trend was found with these data. When the top three levels of the SVP scales were examined for the yes response, a percentage of 69.7% was obtained, however, for the no response a percentage of only 58.6% was obtained. For the lower three levels of the SVP scales, which were examined for the yes response, a percentage of 18.2% was obtained. For the no response, a percentage of 31.0% was found. Again, it appears that there was an increased possibility of higher levels of aspirations, this time, as measured by the SVP for career aspirations, for those students who were involved in extra-curricular activities.

A crosstabulation was conducted to examine the relationship between GED for career expectations and the positive or negative response to the question regarding whether or not students are involved in extra-curricular activities. Table 5.13 shows this crosstabulation. The significance level for this crosstabulation was .287, and therefore, was not significant. Again, a trend was found when the GED levels were compared between the yes and no responses. For the yes response, percentages increase for higher GED levels, as with the no response. There was a slightly higher percentage for the yes response over the no response. A full 78.6% of those students who indicated that they were involved in extra-curricular activities had GED levels of 4, 5, and 6.

Table 5.13:
Participation in Extra-Curricular Activities by GED for Career Expectations

GED Expectations	Yes		No	
	Frequency	Percent	Frequency	Percent
1	0	0	0	0
2	2	7.1	3	12.0
3	4	14.3	9	36.0
4	7	25.0	6	24.0
5	10	35.7	5	20.0
6	5	17.9	2	8.0
Total	28	100.0	25	100.0

Note: $\chi^2 = 4.99$, $p > .05$

This compared with 52.0% for those students who indicated that they were not involved in extra-curricular activities. For those students who indicated that they were involved in extra-curricular activities, 21.4% had GED levels of 1, 2, and 3. This compared with 48.0% for those students who indicated that they were not involved in extra-curricular activities. Again, it appears that there was an increased possibility of higher levels of aspirations, as measured by the GED for career expectations, for those students involved in extra-curricular activities

A similar crosstabulation was conducted to examine the relationship between SVP for career expectations and the positive or negative response to the question regarding whether students were involved in extra-curricular activities. Table 5.14 shows this crosstabulation.

Table 5.14:
Participation in Extra-Curricular Activities by SVP for Career Expectations

SVP Expectations	Yes		No	
	Frequency	Percent	Frequency	Percent
2	0	0	1	4.0
3	1	3.6	1	4.0
4	3	10.7	4	16.0
5	1	3.6	4	16.0
6	5	17.9	3	12.0
7	8	28.6	8	32.0
8	10	35.7	4	16.0
Total	28	100.0	25	100.0

Note: $\chi^2 = 5.86$, $p > .05$

The significance level for this crosstabulation was .439, and therefore, was not significant. Again, a similar trend was found with this data. When the top three levels of the SVP scales were examined for the yes response, a percentage of 82.2% was obtained, however, for the no response a percentage of only 60.0% was obtained. For the lower three levels of the SVP scales were examined for the yes response, a percentage of 14.3% was obtained. For the no response, a percentage of 24.0% was found. Again, it appears that there was an increased possibility of higher levels of aspirations, this time, as measured by the SVP for career expectations, for those students who were involved in extra-curricular activities.

While no conclusive statements can be made based on these data, as a result of a lack of significance, the trends for both career aspirations and career expectations suggest that there may be a positive relationship between students' participating in extra-curricular activities and levels of aspirations as measured by

GED's and SVP's. The extra-curricular activities listed by the respondents included: yearbook committee, career club, school council, various sports teams, cheerleading, drama club, peer tutoring, school spirit committee, choir, and graduation committee.

The next curriculum-based research question asked the respondents if they had information sessions with the guidance counselor. Of the sixty-two subjects in the study, twenty-four (38.7%) had attended sessions, while thirty-eight (61.3%) had not. Of those that had attended sessions, sixteen (66.7%) found these sessions useful, while eight (33.3%) did not. A crosstabulation was conducted to examine the relationship between GED for career aspirations and the positive or negative response to the question regarding whether or not students had participated in information sessions with the guidance counselor. Table 5.15 shows this.

Table 5.15:
Participation in Information Sessions with the Guidance Counselor by GED for Career Aspirations

GED Aspirations	Yes		No	
	Frequency	Percent	Frequency	Percent
1	0	0	0	0
2	0	0	1	2.6
3	7	29.2	13	34.2
4	5	20.8	6	15.8
5	8	33.3	7	18.4
6	4	16.7	11	28.9
Total	24	100.0	38	100.0

Note: $\chi^2 = 3.23$, $p > .05$

The significance level for this crosstabulation was .520, and therefore, was not

significant. A slight trend was found when the GED levels were compared between the yes and no responses. For the yes response, percentages increased for higher GED levels, as with the no response. There was a slightly higher percentage for the yes response over the no response. A full 70.8% of those students who indicated that they were involved in information sessions with the guidance counselor had GED levels of 4, 5, and 6. This compared with 63.1% for those students who indicated that they were not involved in these sessions. In addition, for those students who indicated that they were involved in information sessions, 29.2% had GED levels of 1, 2, and 3. This compared with 36.8% for those students who indicated that they were not involved in information sessions with the guidance counselor. While no firm conclusion can be made, it appeared that there was a possibility of higher levels of aspirations, as measured by the GED for career aspirations, for those students involved in information sessions with the guidance counselor.

A similar crosstabulation was conducted to examine the relationship between SVP for career aspirations and the positive or negative response to the question regarding whether or not students are involved in information sessions with the guidance counselor. Table 5.16 shows this crosstabulation. The significance level for this crosstabulation was .420, and therefore, was not significant. This time very little trend can be seen. When the top three levels of the SVP scales were examined for the yes response, a percentage of 66.7% was

obtained, while, for the no response a percentage of 63.1% was obtained. These values are quite similar. For the lower three levels of the SVP scales, which were examined for the yes response, a percentage of 25.0% was obtained. For the no response, a percentage of 23.6% was found.

Table 5.16:
Participation in Information Sessions with the Guidance Counselor by SVP for Career Aspirations

SVP Aspirations	Yes		No	
	Frequency	Percent	Frequency	Percent
3	0	0	1	2.6
4	6	25.0	4	10.5
5	0	0	4	10.5
6	2	8.3	5	13.2
7	9	37.5	11	28.9
8	6	25.0	12	31.6
9	1	4.2	1	2.6
Total	24	100.0	38	100.0

Note: $\chi^2 = 6.03$, $p > .05$

While these results were similar it appears that for the lower levels, there was an increased possibility of lower levels of aspirations, as measured by the SVP for career aspirations, for those students who were involved in information sessions with the guidance counselor.

A crosstabulation was conducted to examine the relationship between GED for career expectations and the positive or negative response to the question regarding whether students were involved in information sessions with the guidance counselor. Table 5.17 shows this crosstabulation. The significance level for this crosstabulation was .592, and therefore, was not significant. Again, only a

slight trend was found when the GED levels were compared between the yes and no responses. For the yes response, percentages increased for higher GED levels, as with the no response. There was a slightly higher percentage for the yes response over the no response. A full 68.4% of those students who indicated that they were involved in information sessions had GED levels of 4, 5, and 6. This compared with 64.6% for those students who indicated that they were not involved in information sessions with the guidance counselor. In addition, for those students who indicated that they were involved in these sessions, 31.6% had GED levels of 1, 2, and 3. This compared with 35.3% for those students who indicated that they were not involved in these information sessions. Again, it appeared that there was a slightly increased possibility of higher levels of aspirations, as measured by the GED for career expectations, for those students involved in information sessions with the guidance counselor.

Table 5.17:
Participation in Information Sessions with the Guidance Counselor by GED for Career Expectations

GED Expectations	Yes		No	
	Frequency	Percent	Frequency	Percent
1	0	0	0	0
2	1	5.3	4	11.8
3	5	26.3	8	23.5
4	5	26.3	8	23.5
5	7	36.8	8	23.5
6	1	5.3	6	17.6
Total	19	100.0	34	100.0

Note: $X^2 = 2.80$, $p > .05$

A similar crosstabulation was conducted to examine the relationship between SVP for career expectations and the positive or negative response to the question regarding whether students were involved in information sessions with the guidance counselor. Table 5.18 shows this crosstabulation.

Table 5.18:
Participation in Information Sessions with the Guidance Counselor by SVP for Career Expectations

SVP Expectations	Yes		No	
	Frequency	Percent	Frequency	Percent
2	0	0	1	2.9
3	1	5.3	1	2.9
4	2	10.5	5	14.7
5	2	10.5	3	8.8
6	2	10.5	6	17.6
7	6	31.6	10	29.4
8	6	31.6	8	23.5
Total	19	100.0	34	100.0

Note: $\chi^2 = 5.86$, $p > .05$

The significance level for this crosstabulation was .948, and therefore, was not significant. This time very little trend can be seen. When the top three levels of the SVP scales were examined for the yes response, a percentage of 73.7% was obtained, while, for the no response a percentage of 70.5% was obtained. These values were quite similar. For the lower three levels of the SVP scales, which were examined for the yes response, a percentage of 15.8% was obtained. For the no response, a percentage of 20.5% was found. While these results were similar as well, it appeared that for the lower levels, there was an increased possibility of lower levels of aspirations, as measured by the SVP for career aspirations, for

those students who were involved in information sessions with the guidance counselor.

While no conclusive statements were made based on these data, as a result of a lack of significance, the trends for both career aspirations and career expectations suggested that there may have been a slight positive relationship between students participation in information sessions with the guidance counselor and levels of aspirations as measured by GED's and SVP's.

The final question for examination in terms of curricular issues had to do with the question of teacher influence on future career or educational plans. Of the sixty-two subjects in the study, twenty (32.3%) indicated that teachers had played a role in their future plans, while forty-two (67.7%) indicated that they had not. A crosstabulation was conducted to examine the relationship between GED for career aspirations and the positive or negative response to the question regarding whether teachers had been an influence on career or educational decisions. Table 5.19 shows this.

Table 5.19:
Teacher Influence by GED for Career Aspirations

	Yes		No	
GED Aspirations	Frequency	Percent	Frequency	Percent
1	0	0	0	0
2	0	0	1	2.4
3	6	30.0	14	33.3
4	3	15.0	8	19.0
5	6	30.0	9	21.4
6	5	25.0	10	23.8
Total	20	100.0	42	100.0

Note: $X^2 = 1.07$, $p > .05$

The significance level for this crosstabulation was .899, and therefore, was not significant. A slight trend was found when the GED levels were compared between the yes and no responses. For the yes response, percentages increased for higher GED levels, as with the no response. There was a slightly higher percentage for the yes response over the no response. A full 70.0% of those students who indicated that teacher had some influence on their plans had GED levels of 4, 5, and 6. This compares with 64.2% for those students who indicated that teachers had not influenced their plans.

In addition, for those students who indicated teacher influence, 30.0% had GED levels of 1, 2, and 3. This compared with 35.7% for those students who indicated that there was no teacher influence. While no firm conclusion can be made, it appeared that there was a possibility of slightly higher levels of aspirations, as measured by the GED for career aspirations, for those students who had been influenced by teachers in their career or educational decisions.

A similar crosstabulation was conducted to examine the relationship between SVP for career aspirations and the positive or negative response to the question regarding whether teachers had influenced the students' career or educational plans. Table 5.20 shows this crosstabulation. The significance level for this crosstabulation was .895, and therefore, was not significant. This time virtually no trend was found. When the top three levels of the SVP scales were examined for the yes response, a percentage of 65.0% was obtained, while, for the

no response a percentage of 64.3% was obtained. These values were quite similar. For the lower three levels of the SVP scales, which were examined for the yes response, a percentage of 25.0% was obtained. For the no response, a percentage of 23.9% was found.

Table 5.20:
Teacher Influence by SVP for Career Aspirations

SVP Aspirations	Yes		No	
	Frequency	Percent	Frequency	Percent
3	0	0	1	2.4
4	3	15.0	7	16.7
5	2	10.0	2	4.8
6	2	10.0	5	11.9
7	5	25.0	15	35.7
8	7	35.0	11	26.2
9	1	5.0	2.4	2.6
Total	20	100.0	42	100.0

Note: $\chi^2 = 2.52$, $p > .05$

These results were similar as well. So much so that it was virtually impossible to discuss trends with respect to the SVP levels for career aspirations and teacher influence on career or educational plans.

A crosstabulation was conducted to examine the relationship between GED for career expectations and the positive or negative response to the question regarding whether teachers have had an influence on students' career or educational plans. Table 5.21 shows this crosstabulation. The significance level for this crosstabulation was .623, and therefore, was not significant. A trend was found when the GED levels were compared between the yes and no responses.

For the yes response, percentages increased for higher GED levels, as with the no response. There was a slightly higher percentage for the yes response over the no response. A full 81.4% of those students, who indicated that teachers had some influence, had GED levels of 4, 5, and 6. This compared with 59.4% for those students who indicated that teachers had no influence on their plans. In addition, for those students who indicated that there was teacher influence, 18.8% had GED levels of 1, 2, and 3. This compared with 40.5% for those students who indicated that teachers had been an influence on career or educational plans. It appeared that there was an increased possibility of higher levels of aspirations, as measured by the GED for career expectations, for those students who had teachers influence their career or educational plans.

Table 5.21:
Teacher Influence by GED for Career Expectations

GED Expectations	Yes		No	
	Frequency	Percent	Frequency	Percent
1	0	0	0	0
2	1	6.3	4	10.8
3	2	12.5	11	29.7
4	5	31.3	8	21.6
5	5	31.3	10	27.0
6	3	18.8	4	10.8
Total	16	100.0	37	100.0

Note: $\chi^2 = 2.62$, $p > .05$

A similar crosstabulation was conducted to examine the relationship between SVP for career aspirations and the positive or negative response to the question regarding whether teachers had influenced the students' career or

educational plans. Table 5.22 shows this crosstabulation.

Table 5.22:
Teacher Influence by SVP for Career Expectations

SVP Expectations	Yes		No	
	Frequency	Percent	Frequency	Percent
2	0	0	1	2.7
3	0	0	2	5.4
4	3	18.8	4	10.8
5	1	6.3	4	10.8
6	3	18.8	5	13.5
7	3	18.8	13	35.1
8	6	37.5	8	21.6
Total	16	100.0	37	100.0

Note: χ^2 =4.34, p > .05

The significance level for this crosstabulation was .631, and therefore, was not significant. This time a small trend was seen. When the top three levels of the SVP scales were examined for the yes response, a percentage of 75.1% was obtained, while, for the no response, a percentage of 70.2% was obtained. For the lower three levels of the SVP scales, which were examined for the yes response, a percentage of 18.8% was obtained. For the no response, a percentage of 18.9% was found. These results were quite similar. So much so that it was virtually impossible to discuss trends with respect to the SVP levels for career aspirations and teacher influence on career or educational plans.

No conclusive statements were made based on these data, because of a lack of significance. However, the trends for both career aspirations and career expectations suggested that there may be a slight positive relationship between

students indicating that there had been some teacher influence on their career or educational plans. and levels of aspirations particularly as measured by GED's. This trend was not evident when measuring aspirations by SVP's.

The next set of subsidiary questions to be examined was connected to family variables. The first question in this set involved an examination of parents' level of educational attainment and students' career aspirations and expectations. For the parents' level of educational attainment. (see Table 5.23) a listing for both parents was made.

Table 5.23:
Level of Educational Attainment for Subjects' Parents

	Father		Mother	
Grade level	Frequency	Percent	Frequency	Percent
4	1	1.6	1	1.6
5	1	1.6	0	0
6	1	1.6	0	0
7	1	1.6	1	1.6
8	8	12.9	2	3.2
9	5	8.1	11	17.7
10	2	3.2	7	11.3
11	19	30.6	26	41.9
12	0	0	2	3.2
College Diploma	14	22.6	4	6.5
University Degree	2	3.2	6	9.7
Post Graduate	2	3.2	0	0
No response	6	9.7	2	3.2
Total	16	100.0	37	100.0

Note that few numbers of parents were listed as having achieved grade twelve. This was because most of these parents would have graduated with a

grade eleven level, since they would have graduated before the introduction of grade twelve in 1983. The two mothers listed with grade twelve attended Adult Education classes to attain a high school equivalency diploma. For the fathers, those with a high school diploma or greater (59.6%) were less than for the mother (61.3%). When those not completing high school were compared, the fathers have a lower percentage (30.6%) than the mothers (35.4%) did. This may be because there were more no responses for the fathers than the mothers.

A crosstabulation was conducted to examine the relationship between paternal levels of education and levels of aspiration as measured by the GED for career aspirations. The breakdown of educational levels was done in order to give four groupings from very low to high. Those fathers who achieved: from grade four to grade seven were considered very low; from grades eight to ten were considered low; from grades eleven and twelve, the high school graduation level, were considered average; and post-secondary education was considered high. This scheme was also used for the other crosstabulations of parental educational achievement and student aspirations as measured by the GED and SVP for career aspirations and career expectations. Table 5.24 examines this relationship for the fathers' levels of attainment. The chi square value was 8.42, p=.752, therefore these data were not significant. Some trends were seen worth mentioning. For the students whose fathers had post secondary education the GED levels 4, 5, and 6, had a high percentage (77.7%), the students whose fathers had a high school

diploma had the next highest percentage (63.2%). and the students whose fathers had completed grades eight to ten had a lower percentage (53.0%).

Table 5.24:
Fathers' Educational Attainment by GED for Career Aspirations

GED Aspirations	Fathers' Educational Attainment							
	Grades 4-7		Grades 8-10		Grades 11-12		Post-secondary	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
1	0	0	0	0	0	0	0	0
2	0	0	1	6.7	0	0	0	0
3	1	25.0	6	40.0	7	36.8	4	22
4	0	0	3	20.0	3	15.8	4	22.2
5	2	50.0	1	6.7	5	26.3	6	33.3
6	1	25.0	4	26.7	4	21.1	4	22.2
Total	4	100.0	15	100.0	19	100.0	18	100.0

Note: $\chi^2 = 8.42$, $p > .05$

The exception to the rule was with those fathers who had completed grades four to seven. They had a high percentage (75.0%). However, the number of cases in this category was quite low, with only four individuals in that group. There were similar findings for the lower levels of the GED for career aspirations. For GED levels 1, 2, and 3, the lowest percentage of students (22.2%) was for those whose fathers had post secondary education, followed by those students whose fathers had completed high school (36.8%), and by those students whose fathers had completed grades eight to ten (46.7%). Again, there was the exception of those fathers, who had completed grades four and seven (25.0%), probably due to the small group size.

A similar crosstabulation (see Table 5.25) was conducted to examine the

relationship between paternal levels of education and levels of aspiration as measured by the SVP for career aspirations.

Table 5.25:
Fathers' Educational Attainment by SVP for Career Aspirations

SVP Aspirations	Fathers' Educational Attainment							
	Grades 4-7		Grades 8-10		Grades 11-12		Post-secondary	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
3	0	0	1	6.7	0	0	0	0
4	1	25.0	4	26.7	3	15.8	1	5.6
5	0	0	2	13.3	2	10.5	0	0
6	1	25.0	2	13.3	2	10.5	2	11.1
7	1	25.0	2	13.3	4	21.1	10	55.6
8	1	25.0	3	20.0	7	36.8	5	27.8
9	0	0	1	6.7	1	5.3	0	0
Total	4	100.0	15	100.0	19	100.0	18	100.0

Note: $\chi^2 = 16.5$, $p > .05$

While these data were not significant $p = .559$, again, there were some trends worth mentioning. For the students whose fathers had post secondary education the SVP levels 7, 8, and 9, had a very high percentage (83.4%). The students whose fathers had a high school diploma had the next highest percentage (63.2%), and the students whose fathers had completed grades eight to ten had a lower percentage (40.0%). The exception to the rule was with those fathers who had completed grades four to seven. They had a high percentage (50.0%). However, the number of cases in this category was quite low, with only four individuals in that group. There were also similar findings for the lower levels of the SVP for career aspirations. For GED levels, 3, 4, and 5, the lowest percentage

of students (5.6%) was for those whose fathers had post secondary education. This was followed by those students whose fathers had completed high school (26.3%). and by those students whose fathers had completed grades eight to ten (46.7%). Again. there was the exception of those fathers. who had completed grades four and seven (25.0%). probably due to the small group size.

Another crosstabulation was conducted to examine the relationship between paternal levels of education and levels of aspiration as measured by the GED for career expectations. Table 5.26 examines this relationship for the fathers' levels of attainment.

Table 5.26:
Fathers' Educational Attainment by GED for Career Expectations

GED Expectations	Fathers' Educational Attainment							
	Grades 4-7		Grades 8-10		Grades 11-12		Post-secondary	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
1	0	0	0	0	0	0	0	0
2	0	0	3	23.1	1	7.1	1	6.3
3	1	25.0	4	30.8	4	28.6	1	6.3
4	1	25.0	2	15.4	4	28.6	6	37.5
5	1	25.0	3	23.1	4	28.6	5	31.3
6	1	25.0	1	7.7	1	7.1	3	18.8
Total	4	100.0	13	100.0	14	100.0	16	100.0

Note: χ^2 = 8.40, p > .05

The chi square value was 8.40. p=.754. therefore these data were not significant. However. some trends were seen worth mentioning. For the students whose fathers had post secondary education the GED levels 4, 5. and 6. had a high percentage (87.6%). The students whose fathers had a high school diploma had

the next highest percentage (64.3%), and the students whose fathers had completed grades eight to ten had a lower percentage (46.2%). The exception to the rule was with those fathers who had completed grades four to seven. They had a high percentage (75.0%). However, this number of cases was quite low, with only four individuals in that group. There were similar findings for the lower levels of the GED for career expectations. For GED levels 1, 2, and 3, the lowest percentage of students (12.6%) was for those whose fathers had post secondary education. This was followed by those students whose fathers had completed high school (35.7%), and by those students whose fathers had completed grades eight to ten (53.9%). Again, there was the exception of those fathers, who had completed grades four and seven (25.0%), probably due to the small group size.

A similar crosstabulation (see Table 5.27) was conducted to examine the relationship between paternal levels of education and levels of aspiration as measured by the SVP for career expectations.

Table 5.27:
Fathers' Educational Attainment by SVP for Career Expectations

SVP	Fathers' Educational Attainment							
	Grades 4-7		Grades 8-10		Grades 11-12		Post-secondary	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
2	0	0	1	7.7	0	0	0	0
3	0	0	1	7.7	0	0	1	6.3
4	1	25.0	3	23.1	2	14.3	0	0
5	0	0	2	15.4	2	14.3	1	6.3
6	1	25.0	1	7.7	2	14.3	2	12.5
7	1	25.0	3	23.1	4	28.6	6	37.5
8	1	25.0	2	15.4	4	28.6	6	37.5
Total	4	100.0	13	100.0	14	100.0	16	100.0

Note: $\chi^2 = 11.3$, $p > .05$

While these data were not significant p = .883, once again, some trends we seen worth mentioning. For the students whose fathers had post secondary education the SVP levels 6, 7, and 8, had a very high percentage (87.5%). The students whose fathers had a high school diploma had the next highest percentage (71.5%), and the students whose fathers had completed grades eight to ten had a lower percentage (46.2%). The exception to the rule was with those fathers who had completed grades four to seven. They had a high percentage (75.0%). This number of cases was quite low, with only four individuals in that group. There were also similar findings for the lower levels of the SVP for career aspirations. For SVP levels 2, 3, and 4, the lowest percentage of students (6.3%) was for those whose fathers had post secondary education. This was followed by those students whose fathers had completed high school (14.3%), and by those students whose fathers had completed grades eight to ten (38.5%). Again, there was the exception of those fathers, who had completed grades four and seven (25.0%), probably due to the small group size.

While no conclusions were drawn from these data, mainly due to the lack of significance, there appeared to be trends worth discussing. It appeared that there may have been a relationship between the fathers' level of educational attainment and the students' level of aspirations, as measured by the GED and SVP for both, career aspirations and career expectations.

A crosstabulation was conducted to examine the relationship between

maternal levels of education and levels of aspiration as measured by the GED for career aspirations. Table 5.28 examines this relationship for the fathers' levels of attainment.

Table 5.28:
Mothers' Educational Attainment by GED for Career Aspirations

GED Aspirations	Mothers' Educational Attainment							
	Grades 4-7		Grades 8-10		Grades 11-12		Post-secondary	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
1	0	0	0	0	0	0	0	0
2	0	0	1	5.0	0	0	0	0
3	0	0	11	55.0	8	28.6	1	10.0
4	0	0	2	10.0	7	25.0	1	10.0
5	1	50.0	1	5.0	9	32.1	4	40.0
6	1	50.0	5	25.0	4	14.3	4	40.0
Total	2	100.0	20	100.0	28	100.0	10	100.0

Note: X^2 =17.6, p > .05

The chi square value was 17.6, p=.129, therefore these data were not significant. Some trends were seen worth mentioning. For the students whose mothers had post secondary education the GED levels 4, 5, and 6, had a very high percentage (90.0%). The students whose mothers had a high school diploma had the next highest percentage (71.4%), and the students whose mothers had completed grades eight to ten had a lower percentage (40.0%). The exception to the rule was with those mothers who had completed grades four to seven. They had a high percentage (100.0%). However, the number of cases of this was quite low with only two individuals in that group. There were similar findings for the lower levels of the GED for career aspirations. For GED levels, 1, 2, and 3, the

lowest percentage of students (10.0%) was for those whose mothers had post secondary education. This was followed by those students whose mothers had completed high school (28.6%), and by those students whose mothers had completed grades eight to ten (60.0%). Again, there was the exception of those mothers who had completed grades four and seven (0.0%), probably due to the small group size.

A similar crosstabulation (see Table 5.29) was conducted to examine the relationship between maternal levels of education and levels of aspiration as measured by the SVP for career aspirations.

Table 5.29:
Mothers' Educational Attainment by SVP for Career Aspirations

SVP Aspirations	Mothers' Educational Attainment							
	Grades 4-7		Grades 8-10		Grades 11-12		Post-secondary	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
3	0	0	1	5.0	0	0	0	0
4	0	0	7	35.0	2	7.1	1	10.0
5	0	0	1	5.0	3	10.7	0	0
6	1	50.0	1	5.0	5	17.9	0	0
7	0	0	4	20.0	10	35.7	5	50.0
8	1	50.0	4	20.0	8	28.6	4	40.0
9	0	0	2	10.0	0	0	0	0
Total	2	100.0	20	100.0	28	100.0	10	100.0

Note: $X^2 = 23.1$, $p > .05$

While these data were not significant $p = .187$, again, there were some trends worth mentioning. For the students whose mothers had post secondary education the SVP levels 7, 8, and 9, had a very high percentage (90.0%). The

students whose mothers had a high school diploma had the next highest percentage (64.3%). and the students whose mothers had completed grades eight to ten had a lower percentage (50.0%). The exception to the rule was with those mothers who had completed grades four to seven. They had a similar percentage (50.0%). However. the number of cases of this was quite low with only two individuals in that group. There were also similar findings for the lower levels of the SVP for career aspirations. For GED levels. 3. 4. and 5. the lowest percentage of students (10.0%) was for those whose mothers had post secondary education. This was followed by those students whose mothers had completed high school (17.8%). and by those students whose mothers had completed grades eight to ten (45.0%). Again. there was the exception of those mothers. who had completed grades four and seven (0.0%). probably due to the small group size.

Another crosstabulation was conducted to examine the relationship between maternal levels of education and levels of aspiration as measured by the GED for career expectations. Table 5.30 examines this relationship for the mothers' levels of attainment. The chi square value was 10.3. p=.586. Therefore. these data were not significant. However. some trends are worth mentioning. For the students whose mothers had post secondary education the GED levels 4. 5. and 6. had a high percentage (87.5%). The students whose mothers had a high school diploma had the next highest percentage (72.0%). and the students whose mothers had completed grades eight to ten had a lower percentage (50.1%). The exception to

the rule was with those mothers who had completed grades four to seven. They had a high percentage (100.0%). However, the number of cases of this was quite low with only two individuals in that group.

Table 5.30:
Mothers' Educational Attainment by GED for Career Expectations

GED Expectations	Mothers' Educational Attainment							
	Grades 4-7		Grades 8-10		Grades 11-12		Post-secondary	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
1	0	0	0	0	0	0	0	0
2	0	0	3	18.8	2	8.0	0	0
3	0	0	5	31.3	5	20.0	1	12.5
4	0	0	3	18.8	7	28.0	3	37.5
5	2	100.0	3	18.8	8	32.0	2	25.0
6	0	0	2	12.5	3	12.0	2	25.0
Total	2	100.0	16	100.0	25	100.0	8	100.0

Note: $\chi^2 = 10.3$, $p > .05$

There were similar findings for the lower levels of the GED for career expectations. For GED levels, 1, 2, and 3, the lowest percentage of students (12.5%) was for those whose mothers had post secondary education. This was followed by those students whose mothers had completed high school (28.0%), and by those students whose mothers had completed grades eight to ten (50.1%). Again, there was the exception of those mothers, who had completed grades four and seven (0.0%), probably due to the small group size.

A similar crosstabulation (see Table 5.31) was conducted to examine the relationship between maternal levels of education and levels of aspiration as measured by the SVP for career expectations.

Table 5.31:
Mothers' Educational Attainment by SVP for Career Expectations

SVP Expectations	Mothers' Educational Attainment							
	Grades 4-7		Grades 8-10		Grades 11-12		Post-secondary	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
2	0	0	0	0	0	0	0	0
3	0	0	1	6.3	1	4.0	0	0
4	0	0	6	37.5	0	0	1	12.5
5	0	0	1	6.3	4	16.0	0	0
6	1	50.0	2	12.5	4	16.0	0	0
7	1	50.0	3	18.8	7	28.0	4	50.0
8	0	0	3	18.8	8	32.0	3	37.5
Total	2	100.0	16	100.0	25	100.0	8	100.0

Note: $\chi^2 = 20.8$, $p > .05$

While these data were not significant $p = .290$, again, there were some trends worth mentioning. For the students whose mothers had post secondary education the SVP levels 6, 7, and 8, had a very high percentage (87.5%). The students whose mothers had a high school diploma had the next highest percentage (76.0%), and the students whose mothers had completed grades eight to ten had a lower percentage (50.1%). The exception to the rule was with those mothers who had completed grades four to seven. They had a high percentage (100.0%). However, the number of cases of this was quite low with only two individuals in that group. The trend was slightly different for the lower levels of the SVP for career aspirations. For SVP levels 2, 3, and 4, the lowest percentage of students (8.0%) was for those whose mothers had completed high school. This was followed by those students whose mothers had post secondary education (12.5%),

and by those students whose mothers had completed grades eight to ten (43.8%). Again, there was the exception of those mothers, who had completed grades four and seven (0.0%), probably due to the small group size.

While no conclusions were drawn from these data, mainly due to the lack of significance, there appeared to be trends worth discussing. It appeared that there may have been a relationship between the mothers' level of educational attainment and the students' level of aspirations, as measured by the GED and SVP for both career aspirations and career expectations.

The next family variable to be examined was the relationship between parental industrial groupings and the career aspirations and career expectations of the subjects. While there is little need to go into detail about parental occupations, a number of relevant points stand out. For the fathers' industrial groupings fourteen different major groups were listed, however, the vast majority (48.4%) indicated that they were employed in the fishing, trapping and related industries. In fact, when actual careers were examined, those who were listed as being employed as fishermen had the same percentage (48.4%). For the mothers' industrial groupings there were eight major groupings indicated. In this instance, two industrial groupings occurred more than the rest. They were processing occupations (27.4%) and occupations in medicine and health (27.4%). The third most common occupational grouping was clerical and related occupations (12.9%). When actual careers were examined, all of those listed under the

processing occupations were listed as being employed as fishplant workers (27.4%). The second most common career (21.0%) was listed as homecare worker. The third most common career listed was homemaker (11.3%).

To examine the relationship between parental occupation and the career aspirations and career expectations of the students, a crosstabulation was carried out. Table 5.32 lists the crosstabulation between the major industrial groupings of the careers that the students aspired to and the major industrial groupings of the careers in which the fathers were employed. The chi-square value was very high at 207.6, with a significance of .093. While this cannot be accepted as significant, it gives some indication of being worthy of comment. Of greatest interest was the fact that no student aspired to a similar industrial occupational grouping as his or her father. Other points worth mentioning had to do with aspired-to occupational groupings by those students whose fathers were in the fishing industry. Of those students, the greatest percent (23.3%) aspired-to careers within the service industrial grouping. The next highest percentage (16.7%) aspired to careers within the science, engineering, and mathematics industrial grouping.

A similar crosstabulation was conducted between the major industrial groupings of the careers that the students aspired to and the major industrial groupings of the careers in which the mothers were employed

Table 5.32:

(N=60) **Major Industrial Groups Career Aspirations by Fathers' Industries**

		Fathers' Industrial Group						
		Managerial & Administrative	Teaching	Artistic, Literary & Performing Arts	Clerical	Sales	Service	Fishing & Trapping
Aspirations								
Managerial & Administrative	Count							1
	% within aspiration							3.3%
Science, Engineering & Mathematics	Count	2						5
	% within aspiration	50.0%						16.7%
Social Sciences	Count							2
	% within aspiration							6.7%
Religion	Count			1				
	% within aspiration			100.0%				
Teaching	Count							
	% within aspiration							
Medicine & Health	Count	1	1		1			4
	% within aspiration	25.0%	50.0%		50.0%			13.3%
Artistic, Literary & Performing Arts	Count				1	1	2	3
	% within aspiration				50.0%	50.0%	66.7%	10.0%
Sport & Recreation	Count							1
	% within aspiration							3.3%
Clerical	Count						1	1
	% within aspiration						33.3%	3.3%
Service	Count	1						7
	% within aspiration	25.0%						23.3%
Mining, Quarrying & Oil and Gas Occupations	Count							1
	% within aspiration							3.3%
Machining and Related Occupations	Count							2
	% within aspiration							6.7%
Product Fabricating, Assembling & Repairing	Count		1			1		
	% within aspiration		50.0%			50.0%		
Transport Equipment Operating Occupations	Count							3
	% within aspiration							10.0%
Total	Count	4	2	1	2	2	3	30
	% within aspiration	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 4.52 continued

Table 5.32 continued:

(N=60) **Major Industrial Groups Career Aspirations by Fathers' Industries**

		Fathers' Industrial Group							
		Mining, Quarrying & Oil and Gas Occupations	Processing	Machining and Related Occupations	Product Fabricating, Assembling & Repairing	Construction Trades	Transport Equipment Operating Occupations	None Given	Total
Aspirations									
Managerial & Administrative	Count								1
	% within aspiration								1.7%
Science, Engineering & Mathematics	Count							2	9
	% within aspiration							40.0%	15.0%
Social Sciences	Count								2
	% within aspiration								3.3%
Religion	Count		1						2
	% within aspiration		100.0%						3.3%
Teaching	Count							1	1
	% within aspiration							20.0%	1.7%
Medicine & Health	Count					1		1	9
	% within aspiration					25.0%		20.0%	15.0%
Artistic, Literary & Performing Arts	Count					2			9
	% within aspiration					50.0%			15.0%
Sport & Recreation	Count	1						1	3
	% within aspiration	100.0%						20.0%	5.0%
Clerical	Count			1					3
	% within aspiration			100.0%					5.0%
Service	Count				1	1	3		13
	% within aspiration				100.0%	25.0%	100.0%		21.7%
Mining, Quarrying & Oil and Gas Occupations	Count								1
	% within aspiration								1.7%
Machining and Related Occupations	Count								2
	% within aspiration								3.3%
Product Fabricating, Assembling & Repairing	Count								2
	% within aspiration								3.3%
Transport Equipment Operating Occupations	Count								3
	% within aspiration								5.0%
Total	Count	1	1	1	1	4	3	5	60
	% within aspiration	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

χ^2=207.6, p>.05

(see Table 5.33). The chi-square value was high at 119.2, with a significance of .055. While this can not be accepted as significant, it was very close to being significant. Again, these results made the crosstabulation worthy of comment. In this case there were two instances where the industrial grouping of the aspired-to careers matched that of the mothers. Forty percent of the students whose mothers' major industrial grouping was clerical, also aspired to this industrial grouping. Similarly, 5.9% percent of the students whose mothers' major industrial grouping was medicine and health, also aspired to this industrial grouping. The two most common industrial groupings for the mothers were medicine and health and processing both with the same percentage (27.4%). Of those students whose mothers were in the medicine and health industrial grouping, the most common aspired to industrial grouping (29.4%) was in the service industrial grouping. The next highest (23.5%) were in the artistic, literary and performing arts. For the mothers' processing industrial grouping, the two most common aspired to industrial groupings that the subjects had indicated were medicine and health and service both with a percentage of 17.6%.

Table 5.33:

(N=61) **Major Industrial Groups Career Aspirations by Mothers' Industries**

		Mothers' Industrial Group									
		Managerial & Administrative	Teaching	Medicine and Health	Clerical	Sales	Service	Fishing & Trapping	Processing	None Given	Total
Aspirations											
Managerial & Administrative	Count					1					1
	% within aspiration					100.0%					1.6%
Science, Engineering & Mathematics	Count			3	2				2	2	9
	% within aspiration			17.6%	25.0%				11.8%	25.0%	14.8%
Social Sciences	Count			1					1		2
	% within aspiration			5.9%					5.9%		3.3%
Religion	Count			1					1		2
	% within aspiration			5.9%					5.9%		3.3%
Medicine & Health	Count		1	1	2		1	1	3		9
	% within aspiration		50.0%	5.9%	25.0%		20.0%	50.0%	17.6%		14.8%
Artistic, Literary & Performing Arts	Count	1	1	4			1		2	1	10
	% within aspiration	100.0%	50.0%	23.5%			20.0%		11.8%	12.5%	16.4%
Sport & Recreation	Count				1					2	3
	% within aspiration				12.5%					25.0%	4.9%
Clerical	Count							1	1	1	3
	% within aspiration							50.0%	5.9%	12.5%	4.9%
Service	Count			5	2		2		3	2	14
	% within aspiration			29.4%	25.0%		40.0%		17.6%	25.0%	23.0%
Mining, Quarrying & Oil and Gas Occupations	Count								1		1
	% within aspiration								5.9%		1.6%
Machining and Related Occupations	Count			1	1						2
	% within aspiration			5.9%	12.5%						3.3%
Product Fabricating, Assembling & Repairing	Count						1		1		2
	% within aspiration						20.0%		5.9%		3.3%
Transport Equipment Operating Occupations	Count			1					2		3
	% within aspiration			5.9%					11.8%		4.9%
Total	Count	1	2	17	8	1	5	2	17	8	61
	% within aspiration	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

X^2=119.2, p > .05

To examine the relationship between parental industrial grouping and the career expectations of the students, a crosstabulation was carried out. Table 5.34 lists the crosstabulation between the major industrial groupings of the careers that the students expected to obtain and the major industrial groupings of the careers in which the fathers' were employed. The chi square value was very high at 209.1, with a significance of .249. While this can not be accepted as significant, it gives some indication of being worthy of comment. Of greatest interest was the fact that only one student expected to be employed in a similar industrial grouping as his or her father. Of those students whose fathers were employed in the fishing and trapping industrial grouping, a very small percentage (3.3%) expected to be employed in this industry as well. Other points worth mentioning also had to do with expected groupings by those students whose fathers are in the fishing and trapping industrial grouping. Of these, the greatest percent (23.3%) expected to be employed in careers within the science, engineering, and mathematics industrial grouping. The next highest percentage (13.3%) expected careers within the service industrial grouping.

A similar crosstabulation was conducted between the major industrial occupational groupings of the careers that the students expected and the major industrial occupational groupings of the careers in which the mothers were employed (see Table 5.35).

Table 5.34:
Major Industrial Groups Career Expectations by Fathers' Industries

(N=60)

		Fathers' Industrial Group						
		Managerial & Administrative	Teaching	Artistic, Literary & Performing Arts	Clerical	Sales	Service	Fishing & Trapping
Expectations								
Science, Engineering & Mathematics	Count	2						7
	% within aspiration	50.0%						23.3%
Social Sciences	Count							1
	% within aspiration							3.3%
Religion	Count			1				
	% within aspiration			100.0%				
Teaching	Count							
	% within aspiration							
Medicine & Health	Count	1			2			3
	% within aspiration	25.0%			100.0%			10.0%
Artistic, Literary & Performing Arts	Count					1		1
	% within aspiration					50.0%		3.3%
Clerical	Count						1	1
	% within aspiration						33.3%	3.3%
Service	Count	1						4
	% within aspiration	25.0%						13.3%
Fishing and Trapping	Count							1
	% within aspiration							3.3%
Mining, Quarrying & Oil and Gas Occupations	Count							3
	% within aspiration							10.0%
Processing	Count							1
	% within aspiration							3.3%
Machining and Related Occupations	Count							2
	% within aspiration							6.7%
Product Fabricating, Assembling & Repairing	Count		1			1		1
	% within aspiration		50.0%			50.0%		3.3%
Transport Equipment Operating Occupations	Count							1
	% within aspiration							3.3%
Undecided	Count		1				2	4
	% within aspiration		50.0%				66.7%	13.3%
Total	Count	4	2	1	2	2	3	30
	% within aspiration	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 4.54 continued

Table 5.34 continued:

(N=60) **Major Industrial Groups Career Expectations by Fathers' Industries**

		Fathers' Industrial Group							
		Mining, Quarrying & Oil and Gas Occupations	Processing	Machining and Related Occupations	Product Fabricating, Assembling & Repairing	Construction Trades	Transport Equipment Operating Occupations	None Given	Total
Expectations									
Science, Engineering & Mathematics	Count				1			2	12
	% within aspiration				100.0%			40.0%	20.0%
Social Sciences	Count					1			2
	% within aspiration					25.0%			3.3%
Religion	Count		1						2
	% within aspiration		100.0%						3.3%
Teaching	Count							1	1
	% within aspiration							20.0%	1.7%
Medicine & Health	Count					1		1	8
	% within aspiration					25.0%		20.0%	13.3%
Artistic, Literary & Performing Arts	Count								2
	% within aspiration								3.3%
Clerical	Count			1					3
	% within aspiration			100.0%					5.0%
Service	Count	1				2		1	9
	% within aspiration	100.0%				50.0%		20.0%	15.0%
Fishing and Trapping	Count						1		2
	% within aspiration						33.3%		3.3%
Mining, Quarrying & Oil and Gas Occupations	Count					1			3
	% within aspiration					25.0%			5.0%
Processing	Count								1
	% within aspiration								1.7%
Machining and Related Occupations	Count								2
	% within aspiration								3.3%
Product Fabricating, Assembling & Repairing	Count								3
	% within aspiration								5.0%
Transport Equipment Operating Occupations	Count								1
	% within aspiration								1.7%
Undecided	Count						2		9
	% within aspiration						66.7%		15.0%
Total	Count	1	1	1	1	4	3	5	60
	% within aspiration	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

X^2=209.1, p>.05

The chi-square value was high at 80.1, with a significance of .990. While this can not be accepted as significant, again, these results made the crosstabulation worthy of comment. In this case there are three instances where the industrial grouping of the expected careers matched that of the mothers. Twenty percent of the students whose mothers' major industrial grouping was service, also expected to be employed in this industrial grouping. Similarly, 5.9% of the students whose mothers' major industrial grouping was medicine and health, also expected to be employed in this industrial grouping. This was also the case with the processing major industrial grouping. The two most common industrial groupings for the mothers were medicine and health and processing both with the same percentage (27.9%). Of those students whose mothers were in the medicine and health industrial grouping, the most common expected industrial grouping (23.5%) was in the science, engineering and mathematics industrial grouping. The next highest (17.6%) was in the service industrial grouping. For the mothers' processing industrial grouping, the most common expected industrial groupings that the subjects had indicated were science, engineering and mathematics (17.6%). The service, medicine and health, mining quarrying, oil and gas industries and the undecided were next, all with a slightly lower percentage (11.8%).

Table 5.35:

(N=61) **Major Industrial Groups Career Expectations by Mothers' Industries**

		Mothers' Industrial Group									
		Managerial & Administrative	Teaching	Medicine and Health	Clerical	Sales	Service	Fishing & Trapping	Processing	None Given	Total
Expectations											
Science, Engineering & Mathematics	Count			4	3				3	2	12
	% within aspiration			23 5	37 5%				17 6%	25 0%	19 7%
Social Sciences	Count			1					1		2
	% within aspiration			5 9%					5 9%		3 3%
Religion	Count			1					1		2
	% within aspiration			5 9%					5 9%		3 3%
Medicine & Health	Count	1		1	2		2		2		8
	% within aspiration	100 0%		5 9%	25 0%		40 0%		11 8%		13 1%
Artistic, Literary & Performing Arts	Count		1	2							3
	% within aspiration		50 0%	11 8%							4 9%
Clerical	Count							1	1	1	3
	% within aspiration							50 0%	5 9%	12 5%	4 9%
Service	Count			3	1		1		2	2	9
	% within aspiration			17 6%	12 5%		20 0%		11 8%	25 0%	14 8%
Farming & Horticultural Occupations	Count			1							1
	% within aspiration			5 9%							1 6%
Fishing and Trapping	Count			1						1	2
	% within aspiration			5 9%						12 5%	3 3%
Mining, Quarrying & Oil and Gas Occupations	Count						1		2		3
	% within aspiration						20 0%		11 8%		4 9%
Processing	Count								1		1
	% within aspiration								5 9%		1 6%
Machining and Related Occupations	Count			1	1						2
	% within aspiration			5 9%	12 5%						3 3%
Product Fabricating, Assembling & Repairing	Count				1		1		1		3
	% within aspiration				12 5%		20 0%		5 9%		4 9%
Transport Equipment Operating Occupations	Count								1		1
	% within aspiration								5 9%		1 6%
Undecided	Count		1	2		1		1	2	2	9
	% within aspiration		50 0%	11 8%		100 0%		50 0%	11 8%	25 0%	14 8%
Total	Count	1	2	17	8	1	5	2	17	8	61
	% within aspiration	100 0%	100 0%	100 0%	100 0%	100 0%	100 0%	100 0%	100 0%	100 0%	100 0%

X^2=80.1, p > .05

The final aspect to be examined was in terms of the relationship between parental employment and student aspiration levels. as measured by the GED and SVP for career aspirations and career expectations. Both of the parents' careers were rated for aspirational level on the GED and SVP scales and a correlation was carried out between the parents' GED levels and the students' GED levels. A similar correlation was carried out for the parents' and students' SVP levels. Table 5.36 shows the results for fathers' GED levels correlated with the students' GED levels for both career aspirations and career expectations.

Table 5.36:
Fathers' GED Levels by Students' GED Levels for Career Aspirations and Career Expectations

			GED Father
Spearman's rho	GED Aspirations	Correlation Coefficient	-.008
		Sig. (2-tailed)	.956
		N	56
	GED Expectations	Correlation Coefficient	.270
		Sig. (2-tailed)	.067
		N	47

There was a very slight negative correlation (-.008) between the fathers' GED levels and the students' GED levels for career aspirations and it was not significant. There was a positive correlation between the fathers' GED level and the students' GED level for career expectations and with a significance level of .067. it was very nearly significant.

Table 5.37 shows the correlation between the fathers' SVP levels and the students' SVP levels for career aspirations and career expectations.

Table 5.37:
Fathers' SVP Levels by Students' SVP Levels for Career Aspirations and Career Expectations

			SVP Father
Spearman's rho	SVP Aspirations	Correlation Coefficient	-.056
		Sig. (2-tailed)	.685
		N	55
	SVP Expectations	Correlation Coefficient	.113
		Sig. (2-tailed)	.453
		N	46

Again, there was a very slight negative correlation (-.056) between the fathers' GED levels and the students' GED levels for career aspirations and it was not significant. There was a positive correlation between the fathers' GED level and the students' GED level for career expectations but with a significance level of .453, it was not significant.

Table 5.38 shows the results for mothers' GED levels correlated with the students' GED levels for both career aspirations and career expectations.

Table 5.38:
Mothers' GED Levels by Students' GED Levels for Career Aspirations and Career Expectations

			GED Mother
Spearman's rho	GED Aspirations	Correlation Coefficient	.013
		Sig. (2-tailed)	.928
		N	53
	GED Expectations	Correlation Coefficient	.179
		Sig. (2-tailed)	.233
		N	46

There was a very slight positive correlation (.013) between the mothers' GED levels and the students' GED levels for career aspirations and it was not

significant. There was also a positive correlation between the mothers' GED level and the students' GED level for career expectations but with a significance level of .233, it was not significant.

Table 5.39 shows the correlation between the mothers' SVP levels and the students' SVP levels for career aspirations and career expectations.

Table 5.39:
Mothers' SVP Levels by Students' SVP Levels for Career Aspirations and Career Expectations

			SVP Mother
Spearman's rho	SVP Aspirations	Correlation Coefficient	-.038
		Sig. (2-tailed)	.789
		N	53
	SVP Expectations	Correlation Coefficient	.034
		Sig. (2-tailed)	.823
		N	46

Again, there was a very slight negative correlation (-.038) between the mothers' GED levels and the students' GED levels for career aspirations and it was not significant. There was a positive correlation between the mothers' GED level and the students' GED level for career expectations but with a significance level of .823, it was not significant.

The next subsidiary research question to be examined was dealing with parental (or other close family member) involvement in the decision making process. The question, coded HFC4, was stated: *have any of your relatives helped you to decide what you are going to do after high school, in terms of either jobs or education?*

Crosstabulations were carried out to examine the relationship between student aspirations, as measured by GED and SVP for career aspirations and career expectations, and whether family members had influenced the decision making process. The first crosstabulation (see Table 5.40) examined the relationship between the GED for career aspirations and family influence.

Table 5.40:
Family Influence by GED for Career Aspirations

GED Aspirations	Yes		No	
	Frequency	Percent	Frequency	Percent
1	0	0	0	0
2	1	2.3	0	0
3	14	31.8	6	33.3
4	8	18.2	3	16.7
5	13	29.5	2	11.1
6	8	18.2	7	38.9
Total	44	100.0	18	100.0

Note: $\chi^2 = 4.49$, $p > .05$

The significance level for this crosstabulation was .343, and therefore, was not significant. A very slight trend was found when the GED levels were compared between the yes and no responses. For the no response, percentages increase for higher GED levels, as with the yes response. There was a slightly higher percentage for the no response over the yes response. A full 66.7% of those students who indicated that family had no influence on their plans had GED levels of 4, 5, and 6. This compared with 65.9% for those students who indicated that family had influenced their plans. In addition, for those students who indicated no family influence, 34.1% had GED levels of 1, 2, and 3. This

compared with 33.3% for those students who indicated that there was some family influence.

While no firm conclusion was made, it appeared that there was a possibility of slightly higher levels of aspirations, as measured by the GED for career aspirations, for those students who had not been influenced by families in their career or educational decisions.

A similar crosstabulation was conducted to examine the relationship between SVP for career aspirations and the positive or negative response to the question regarding whether families had influenced the students' career or educational plans. Table 5.41 shows this crosstabulation.

Table 5.41:
Family Influence by SVP for Career Aspirations

SVP Aspirations	Yes		No	
	Frequency	Percent	Frequency	Percent
3	1	2.3	0	0
4	6	13.6	4	22.2
5	4	9.1	0	0
6	6	13.6	1	5.6
7	14	31.8	6	33.3
8	12	27.3	6	33.3
9	1	2.3	1	5.6
Total	44	100.0	18	100.0

Note: $\chi^2 = 3.97$, $p > .05$

The significance level for this crosstabulation was .681, and therefore, was not significant. This time a slight trend can be seen. When the top three levels of the SVP scales were examined for the no response, a percentage of 72.2% was

obtained, while, for the yes response a percentage of 61.4% was obtained. For the lower three levels of the SVP scales that were examined for the no response, a percentage of 22.2% was obtained. For the yes response, a percentage of 25.0% was found.

Again, while no firm conclusion was made, it appeared that there was a possibility of slightly higher levels of aspirations, as measured by the SVP for career aspirations, for those students who had not been influenced by families in their career or educational decisions.

A crosstabulation was conducted to examine the relationship between GED for career expectations and the positive or negative response to the question regarding whether families have had an influence on students' career or educational plans. Table 5.42 shows this crosstabulation.

Table 5.42:
Family Influence by GED for Career Expectations

GED Expectations	Yes		No	
	Frequency	Percent	Frequency	Percent
1	0	0	0	0
2	5	13.2	0	0
3	9	27.3	4	26.7
4	9	23.7	4	26.7
5	11	28.9	4	26.7
6	4	10.5	3	20.0
Total	38	100.0	15	100.0

Note: $\chi^2 = 2.80$, $p > .05$

The significance level for this crosstabulation was .591, and therefore, was not significant. A trend was found when the GED levels were compared between

the yes and no responses. For the no response, percentages increased for higher GED levels, as with the yes response. There was a slightly higher percentage for the no response over the yes response. A full 73.4% of those students, who indicated that families had no influence, had GED levels of 4, 5, and 6. This compared with 63.1% for those students who indicated that families had some influence on their plans. In addition, for those students who indicated that there was no family influence, 26.7% had GED levels of 1, 2, and 3. This compared with 36.9% for those students who indicated that families had been an influence on career or educational plans. It appeared that there was an increased possibility of higher levels of aspirations, as measured by the GED for career expectations, for those students who did not have families influence their career or educational plans.

A similar crosstabulation was conducted to examine the relationship between SVP for career aspirations and the positive or negative response to the question regarding whether families had influenced the students' career or educational plans. Table 5.43 shows this crosstabulation. The significance level for this crosstabulation was .794, and therefore, was not significant. This time a small trend was seen. When the top three levels of the SVP scales were examined for the no response, a percentage of 86.6% was obtained, while, for the yes response, a percentage of 65.8% was obtained. For the lower three levels of the SVP scales were examined for the no response, a percentage of 6.7% was

obtained. For the yes response, a percentage of 23.7% was found.

Table 5.43:
Family Influence by SVP for Career Expectations

SVP Expectations	Yes		No	
	Frequency	Percent	Frequency	Percent
2	1	2.6	1	2.7
3	2	5.3	0	0
4	6	15.8	1	6.7
5	4	10.5	1	6.7
6	6	15.8	2	13.3
7	10	26.3	6	40.0
8	9	23.7	5	33.3
Total	38	100.0	15	100.0

Note: $\chi^2 = 3.12$, $p > .05$

Again, while no firm conclusion was made, it appeared that there was a possibility of slightly higher levels of aspirations, as measured by the SVP for career expectations, for those students who had not been influenced by families in their career or educational decisions.

No conclusive statements were made based on these data, because of a lack of significance. However, the trends for both career aspirations and career expectations suggested that there may have been a slight positive relationship between students indicating that there had not been a family influence on their career or educational plans, and levels of aspirations as measured by GED's and SVP's.

As part of the research question dealing with family influence on student career and/or educational decisions, the students were asked how family members

helped in these decisions. Students were allowed to give multiple responses. All responses were recorded and frequencies tabulated. Table 5.44 gives the ways in which family members helped in decisions regarding educational and/or career plans.

Table 5.44:
How Family Members Helped With Future Plans

Response	Frequency	Percent(%)
Discussed careers as machinist	1	1.5
Discussed careers in engineering	1	1.5
Discussed careers in journalism	1	1.5
Discussed careers in medical field	1	1.5
Discussed careers in nursing	1	1.5
Discussed careers in R.C.M.P.	1	1.5
Discussed fishing career with father	1	1.5
Discussed inappropriate jobs	1	1.5
Encouraged work in fishplant	1	1.5
Obtained employment for me	1	1.5
Provided financial assistance	1	1.5
Discussed various career incomes	2	3.1
Helped decide on a university	2	3.1
Helped make lists of interests and strengths	2	3.1
Discouraged entering parents' profession	3	4.6
Discussed careers in armed forces	3	4.6
Encouraged leaving to find work	3	4.6
Discussed careers in computing	5	7.7
Discussed various job opportunities	5	7.7
Provided role model	7	10.8
Discussed job interests	9	13.8
Encouraged continued education	13	20.0
Total	65	100

Forty-four subjects (71.0%) indicated that family members did help with decisions. The largest percentage (20.0%) indicated that family members

encouraged continued education. The second highest (13.8%) indicated that family members discussed job interests with them in order to help with the decision-making process. The next highest (10.8%) indicated that a family member was a role model, someone to try to emulate.

The next subsidiary research question to be addressed had to do with the roles which media and information technology played in influencing students' educational and career plans. Crosstabulations were carried out to examine the relationship between student aspirations, as measured by GED and SVP for career aspirations and career expectations, and whether the media and information technology had influenced the decision-making process. The first aspect examined was the role of media, such as television and radio, on levels of aspiration as measured by the GED for career aspirations. Students were asked if they had obtained through the media, information that had helped them in making plans. The first crosstabulation (see Table 5.45) examined this relationship between the GED for career aspirations and influences of the media.

Table 5.45:
Media Influence by GED for Career Aspirations

	Yes		No	
GED Aspirations	Frequency	Percent	Frequency	Percent
1	0	0	0	0
2	0	0	1	2.9
3	10	37.0	10	28.6
4	5	18.5	6	17.1
5	7	25.9	8	22.9
6	5	18.5	10	28.6
Total	27	100.0	35	100.0

Note: $X^2 = 1.82$, $p > .05$

The significance level for this crosstabulation was .768, and therefore, was not significant. A trend was found when the GED levels were compared between the yes and no responses. For the no response, percentages increased for higher GED levels, as with the yes response. There was a slightly higher percentage for the no response over the yes response. A full 68.6% of those students who indicated that media had no influence on their plans had GED levels of 4, 5, and 6. This compared with 62.9% for those students who indicated that media had some influence on their plans.

In addition, for those students who indicated no media influence, 31.5% had GED levels of 1, 2, and 3. This compared with 37.0% for those students who indicated that there was some media influence. While no firm conclusion was made, it appeared that there was a possibility of slightly higher levels of aspirations, as measured by the GED for career aspirations, for those students who had not been influenced by media in their career or educational decisions.

A similar crosstabulation was conducted to examine the relationship between SVP for career aspirations and the positive or negative response to the question regarding whether media had influenced the students' career or educational plans. Table 5.46 shows this crosstabulation. The significance level for this crosstabulation was .739, and was therefore, not significant. This time a slight reverse trend was found. When the top three levels of the SVP scales were examined for the yes response, a percentage of 66.6% was obtained, while, for the

no response a percentage of 62.9% was obtained.

Table 5.46:
Media Influence by SVP for Career Aspirations

SVP Aspirations	Yes		No	
	Frequency	Percent	Frequency	Percent
3	0	0	1	2.9
4	5	18.5	5	14.3
5	2	7.4	2	5.7
6	2	7.4	5	14.3
7	10	37.0	10	28.6
8	8	29.6	10	28.6
9	0	0	2	5.7
Total	27	100.0	35	100.0

Note: $\chi^2 = 3.54$, $p > .05$

The opposite was the case for the lower three levels of the SVP scales that were examined. For the no response, a percentage of 22.9% was obtained and for the yes response, a percentage of 25.9% was found. With the results opposite from the higher to the lower levels of the SVP scales, it was virtually impossible to draw anything substantial from this set of data.

A crosstabulation was conducted to examine the relationship between GED for career expectations and the positive or negative response to the question regarding whether the media has had an influence on students' career or educational plans. Table 5.47 shows this crosstabulation. The significance level for this crosstabulation was .356, and therefore, was not significant. A trend was found when the GED levels were compared between the yes and no responses. For the no response, percentages increase for higher GED levels, as with the yes

response.

Table 5.47:
Media Influence by GED for Career Expectations

GED Expectations	Yes		No	
	Frequency	Percent	Frequency	Percent
1	0	0	0	0
2	1	4.0	4	14.3
3	9	36.0	4	14.3
4	6	24.0	7	25.0
5	6	24.0	9	32.1
6	3	12.0	4	14.3
Total	25	100.0	28	100.0

Note: $\chi^2 = 4.39$, $p > .05$

There was a slightly higher percentage for the no response over the yes response. A full 71.4% of those students, who indicated that the media had no influence, had GED levels of 4, 5, and 6. This compared with 60.0% for those students who indicated that the media had some influence on their plans. In addition, for those students who indicated that there was no media influence, 28.6% had GED levels of 1, 2, and 3. This compared with 40.0% for those students who indicated that the media had been an influence on career or educational plans. It appeared that there was an increased possibility of higher levels of aspirations, as measured by the GED for career expectations, for those students whom media had not influenced, in terms of career or educational plans.

Another crosstabulation was conducted to examine the relationship between SVP for career aspirations and the positive or negative response to the question regarding whether the media had influenced the students' career or educational

plans. Table 5.48 shows this crosstabulation.

Table 5.48:
Media Influence by SVP for Career Expectations

SVP Expectations	Yes		No	
	Frequency	Percent	Frequency	Percent
2	0	0	1	3.6
3	0	0	2	7.1
4	5	20.0	2	7.1
5	1	4.0	4	14.3
6	4	16.0	4	14.3
7	9	36.0	7	25.0
8	6	24.0	8	28.6
Total	25	100.0	28	100.0

Note: $\chi^2 = 6.47$, $p > .05$

The significance level for this crosstabulation was .372, and therefore, was not significant. Again the small trend was opposite of that for the GED. When the top three levels of the SVP scales were examined for the yes response, a percentage of 76.0% was obtained, while, for the no response, a percentage of 67.9% was obtained. Again the trend was opposite for the lower three levels of the SVP scales. When they were examined for the no response, a percentage of 17.8% was obtained. For the yes response, a percentage of 20.0% was found. With the results opposite from the higher to the lower levels of the SVP scales, it was virtually impossible to draw anything substantial from this set of data.

No conclusive statements were made based on these data, because of a lack of significance. However, the trends for both career aspirations and career expectations suggested that there may have been a slight positive relationship

between students indicating that there had been no media influence on their career or educational plans, and levels of aspirations as measured by GED's. The opposite appeared to be the case for the SVP's.

The second part to the media question involved asking the students how the media had helped with these plans. Twenty-seven students (43.5%) responded that the media had helped in making plans. Students were allowed to give multiple responses. All responses were recorded and frequencies tabulated. Table 5.49 gives the ways in which the media have helped in decisions regarding educational and/or career plans.

Table 5.49:
How the Media Have Helped in Educational and Career Plans

Response	Frequency	Percent(%)
Gained information on post-secondary institutions	1	3.7
Gained information on employment trends	2	7.4
Learned about the merits of education	3	11.1
Gained exposure to varied careers	5	18.5
Helped develop specific career interests	16	59.3
Total	27	100

As seen in Table 5.49, the most common response (59.3%) to how the media had influenced career and educational plans was to help develop interests in specific careers. The next most common response (18.5%) was that the media had helped to gain exposure to a variety of careers.

The next aspect of the media and information technology question was whether the students used computers. A crosstabulation (see Table 5.50) was

carried out to examine the relationship between levels of aspiration, as measured by the GED for career aspirations, and whether the students used computers. Fifty-five (88.7%) said that they used computers.

Table 5.50:
Computer Use by GED for Career Aspirations

GED Aspirations	Yes		No	
	Frequency	Percent	Frequency	Percent
1	0	0	0	0
2	1	1.8	0	0
3	17	30.9	3	42.9
4	11	20.0	0	0
5	11	20.0	4	57.1
6	15	27.3	0	0
Total	55	100.0	7	100.0

Note: $\chi^2 = 7.25$, $p > .05$

The significance level for this crosstabulation was .123, and therefore, was not significant. A trend was found when the GED levels were compared between the yes and no responses. For the yes response, percentages increase for higher GED levels, as with the no response. There was a slightly higher percentage for the yes response over the no response. A full 67.3% of those students who indicated that they use computers had GED levels of 4, 5, and 6. This compared with 57.1% for those students who indicated that they do not use computers. In addition, for those students who indicated computer use, 32.7% had GED levels of 1, 2, and 3. This compared with 42.9% for those students who indicated no computer use. While no firm conclusion was made, it appeared that there was a possibility of slightly higher levels of aspirations, as measured by the GED for

career aspirations, for those students who used computers.

A similar crosstabulation was conducted to examine the relationship between SVP for career aspirations and the positive or negative response to the question regarding computer use. Table 5.51 shows this crosstabulation.

Table 5.51:
Computer Use by SVP for Career Aspirations

SVP Aspirations	Yes		No	
	Frequency	Percent	Frequency	Percent
3	1	1.8	0	0
4	8	14.5	2	28.6
5	4	7.3	0	0
6	6	10.9	1	14.3
7	16	29.1	4	57.1
8	18	32.7	0	0
9	2	3.6	0	0
Total	55	100.0	7	100.0

Note: $\chi^2 = 5.52$, $p > .05$

The significance level for this crosstabulation was .479, and therefore, was not significant. Again, a trend was found. When the top three levels of the SVP scales were examined for the yes response, a percentage of 65.4% was obtained, while, for the no response a percentage of 57.1% was obtained. For the lower three levels of the SVP scales that were examined, the no response, had a percentage of 28.6% and for the yes response, a percentage of 23.6% was found. While no firm conclusion was made, it appeared that there was a possibility of slightly higher levels of aspirations, as measured by the SVP for career aspirations, for those students who use computers.

A crosstabulation was conducted to examine the relationship between GED for career expectations and the positive or negative response to the question regarding computer use. Table 5.52 shows this crosstabulation.

Table 5.52:
Computer Use by GED for Career Expectations

	Yes		No	
GED Expectations	Frequency	Percent	Frequency	Percent
1	0	0	0	0
2	5	10.4	0	0
3	12	25.0	1	20.0
4	11	22.9	2	40.0
5	13	27.1	2	40.0
6	7	14.6	0	0
Total	48	100.0	5	100.0

Note: $X^2 = 2.10$, $p > .05$

The significance level for this crosstabulation was .717, and therefore, was not significant. An opposite trend was found when the GED levels were compared between the yes and no responses. For the no response, percentages increased for higher GED levels, as with the yes response. There was a higher percentage for the no response over the yes response. A full 80.0% of those students, who indicated that they did not use computers, had GED levels of 4, 5, and 6. This compared with 64.6% for those students who indicated that they used computers. In addition, for those students who indicated no computer use, 20.0% had GED levels of 1, 2, and 3. This compared with 35.4% for those students who indicated computer use. It appeared that there was an increased possibility of higher levels of aspirations, as measured by the GED for career expectations, for those students

who did not use computers.

Another crosstabulation was conducted to examine the relationship between SVP for career aspirations and the positive or negative response to the question regarding computer use. Table 5.53 shows this crosstabulation.

Table 5.53:
Computer Use by SVP for Career Expectations

SVP Expectations	Yes		No	
	Frequency	Percent	Frequency	Percent
2	0	0	1	3.6
3	0	0	2	7.1
4	5	20.0	2	7.1
5	1	4.0	4	14.3
6	4	16.0	4	14.3
7	9	36.0	7	25.0
8	6	24.0	8	28.6
Total	25	100.0	28	100.0

Note: χ^2 =4.20, p > .05

The significance level for this crosstabulation was .650, and therefore, was not significant. Again the small trend was opposite of that for the GED and SVP for career aspirations. When the top three levels of the SVP scales were examined for the no response, a percentage of 80.0% was obtained, while, for the yes response, a percentage of 70.9% was obtained. When they were examined for the yes response, a percentage of 18.8% was obtained. For the no response, a percentage of 20.0% was found. It appeared that there was an increased possibility of higher levels of aspirations, as measured by the SVP for career expectations, for those students who did not use computers.

No conclusive statements were made based on these data, because of a lack of significance. However, there were differing trends for both career aspirations and career expectations. For career aspirations, these data suggested that there may have been a slight positive relationship between students indicating that they used computers, and levels of aspirations as measured by GED's and SVP's. The opposite appeared to be the case for the career expectations. These data suggested that there was a slight positive relationship between students indicating that they did not use computers and levels of aspirations as measured by GED's and SVP's.

The final question under the media-information-technology section examined the role of computers and the internet to obtain information about possible career and educational choices. Students were asked about whether they used computers and the internet to obtain this information. Twenty-six (41.9%) of the students indicated that they had used computers and/or the Internet to obtain career and educational information. A crosstabulation (see Table 5.54) was carried out to examine the relationship between levels of aspiration, as measured by GED levels for career aspirations, and a positive or negative response to computer and/or internet use to gain information. The significance level for this crosstabulation was .616, and therefore, was not significant. A very slight trend was found when the GED levels were compared between the yes and no responses. For the no response, percentages increase for higher GED levels, as with the yes response.

Table 5.54:
Computer and Internet use by GED for Career Aspirations

GED Aspirations	Yes		No	
	Frequency	Percent	Frequency	Percent
1	0	0	0	0
2	1	3.8	0	0
3	8	30.8	12	33.3
4	3	11.5	8	22.2
5	7	26.9	8	22.2
6	7	26.9	8	22.2
Total	26	100.0	36	100.0

Note: $\chi^2 = 2.66$, $p > .05$

There was a slightly higher percentage for the no response over the yes response. A full 66.6% of those students, who indicated that they had not used computers and the internet to gain information, had GED levels of 4, 5, and 6. This compared with 65.3% for those students who had used computers and the internet. In addition, for those students who indicated no, 33.3% had GED levels of 1, 2, and 3. This compared with 34.6% for those students who indicated yes.

While no firm conclusion can be made, it appeared that there was a possibility of slightly higher levels of aspirations, as measured by the GED for career aspirations, for those students who had not used computers and the internet to obtain information about careers and education.

A similar crosstabulation was conducted to examine the relationship between SVP for career aspirations and the positive or negative response to the question regarding computer and internet use. Table 5.55 shows this crosstabulation.

Table 5.55:
Computer and Internet Use by SVP for Career Aspirations

SVP Aspirations	Yes		No	
	Frequency	Percent	Frequency	Percent
3	1	3.8	0	0
4	4	15.4	6	16.7
5	2	7.7	2	5.6
6	1	3.8	6	16.7
7	9	34.6	11	30.6
8	8	30.8	10	27.8
9	1	3.8	1	2.8
Total	26	100.0	36	100.0

Note: $\chi^2 = 3.88$, $p > .05$

The significance level for this crosstabulation was .693, and therefore, was not significant. This time a slight trend was seen. When the top three levels of the SVP scales were examined for the yes response, a percentage of 69.2% was obtained, while, for the no response a percentage of 61.2% was obtained. The opposite trend was found for the lower three levels of the SVP scales that were examined. For the no response, a percentage of 22.3% was obtained. For the yes response, a percentage of 26.9% was found. With opposite results from the higher to the lower levels of the SVP scales, it was virtually impossible to draw anything substantial from this set of data.

A crosstabulation was conducted to examine the relationship between GED for career expectations and the positive or negative response to the question regarding computer and internet use. Table 5.56 shows this crosstabulation.

Table 5.56:
Computer and Internet Use by GED for Career Expectations

GED Expectations	Yes		No	
	Frequency	Percent	Frequency	Percent
1	0	0	0	0
2	4	17.4	1	3.3
3	6	26.1	7	23.3
4	3	13.0	10	33.3
5	7	30.4	8	26.7
6	3	13.0	4	13.3
Total	23	100.0	30	100.0

Note: $X^2 = 5.02$, $p > .05$

The significance level for this crosstabulation was .285, and therefore, was not significant. A trend was found when the GED levels were compared between the yes and no responses. For the no response, percentages increased for higher GED levels, as with the yes response. There was a slightly higher percentage for the no response over the yes response. A full 73.3% of those students, who indicated no computer or internet use, had GED levels of 4, 5, and 6. This compared with 56.4% for those students who indicated that they had some computer and internet use. In addition, for those students who indicated that there was no computer and internet use, 26.6% had GED levels of 1, 2, and 3. This compared with 43.5% for those students who indicated that they had used computers and the internet to obtain career information. It appeared that there was an increased possibility of higher levels of aspirations, as measured by the GED for career expectations, for those students who did not use computers and/or the internet to obtain information regarding careers or education.

A similar crosstabulation was conducted to examine the relationship between SVP for career aspirations and the positive or negative response to the question regarding whether students used computers and/or the internet to obtain information about education or careers. Table 5.57 shows this crosstabulation.

Table 5.57:
Computer and Internet Use by SVP for Career Expectations

	Yes		No	
SVP Expectations	Frequency	Percent	Frequency	Percent
2	1	4.3	0	0
3	1	4.3	1	3.3
4	5	21.7	2	6.7
5	2	8.7	3	10.0
6	3	13.0	5	16.7
7	6	26.1	10	33.3
8	5	21.7	9	30.0
Total	23	100.0	30	100.0

Note: $\chi^2 = 4.28$, $p > .05$

The significance level for this crosstabulation was .639, and therefore, was not significant. A very slight trend was found when the GED levels were compared between the yes and no responses. For the no response, percentages increased for higher GED levels, as with the yes response. This time a trend was seen. When the top three levels of the SVP scales were examined for the no response, a percentage of 80.0% was obtained, while, for the yes response, a percentage of 60.8% was obtained. For the lower three levels of the SVP scales, which were examined for the no response, a percentage of 10.0% was obtained. For the yes response, a percentage of 30.3% was found.

Again, while no firm conclusion was made, it appeared that there was a

possibility of slightly higher levels of aspirations, as measured by the SVP for career expectations, for those students who had not used computers and/or the internet to obtain career and educational information.

No conclusive statements were made based on these data, because of a lack of significance. However, the trends for both career aspirations and career expectations suggested that there may be a slight positive relationship between students indicating that they did not use computers and/or the internet to obtain career information, and levels of aspirations as measured by GED's and SVP's.

The next subsidiary question to be examined deals with gender differences. The research question was assigned to determine whether there was any gender differences in the data, with respect to the prior analyses.

The first set of gender data (see Table 5.58) examined was with the major industrial occupational grouping to which males and females aspired. A number of interesting points emerged from these data. Note that the data were displayed in such a way as to show initially, those major industrial groupings to which both males and females aspired, then those to which only the males aspired and finally those to which only the females aspired. Of the common industries listed, the service industries had the highest percentages for both males (27.6%) and females (18.2%). For the males, science, engineering and mathematics had the next highest percentage (17.2%), while for females it was the artistic, literature, and performing arts (18.2%) which tied for first place.

Table 5.58:
Gender Differences for Major Industrial Groupings for Career Aspirations
(N=62)

	Males		Females	
Major Industrial Grouping	**Frequency**	**Percent**	**Frequency**	**Percent**
Transport Equipment Operating	2	6.9	1	3.0
Artistic, Literary, and Performing Arts	4	13.8	6	18.2
Science, Engineering and Mathematics	5	17.2	4	12.1
Service Industries	8	27.6	6	18.2
Mining, Quarrying, Oil and Gas	1	3.4	0	0
Machining and related	2	6.9	0	0
Product Fabrication, Assembling, and Repair	2	6.9	0	0
Religion	2	6.9	0	0
Sports and Recreation	3	10.3	0	0
Managerial and Administration	0	0	1	3.0
Teaching	0	0	1	3.0
Social Sciences	0	0	2	6.1
Clerical	0	0	3	9.1
Medicine and Health	0	0	9	27.3
Total	29	100.0	33	100.0

Perhaps the most telling aspect of these data lies in those industrial groupings that were limited to either males or females. For the most part those industrial groupings, to which only males aspired, were traditionally male-oriented industries. This was essentially the same for those industries to which only the females aspired. There were a few exceptions, with the most notable being medicine and health. It was noted that for the females this was the highest aspired-to industrial grouping (27.3%) while no males aspired to this industrial grouping at all. Another interesting note was for the science, engineering and mathematics industrial grouping that traditionally has been male-dominated. In

this instance, there was a relatively high percentage (12.1%) of females aspiring to this industrial grouping.

The next set of gender data (see Table 5.59) to be examined deals with the major industrial groupings which males and females expected to obtain.

Table 5.59:
Gender Differences for Major Industrial Groupings for Career Expectations
(N=62)

	Males		Females	
Major Industrial Grouping	**Frequency**	**Percent**	**Frequency**	**Percent**
Artistic, Literary, and Performing Arts	2	6.9	1	3.0
Undecided	2	6.9	7	21.2
Service Industries	5	17.2	4	12.1
Science, Engineering and Mathematics	7	24.1	4	12.1
Transport Equipment Operating	1	3.4	0	0
Fishing and Trapping	2	6.9	0	0
Machining and related	2	6.9	0	0
Religion	2	6.9	0	0
Mining, Quarrying, Oil and Gas	3	10.3	0	0
Product Fabrication, Assembling, and Repair	3	10.3	0	0
Farming and Horticulture	0	0	1	3.0
Processing	0	0	1	3.0
Teaching	0	0	1	3.0
Social Sciences	0	0	2	6.1
Clerical	0	0	3	9.1
Medicine and Health	0	0	8	24.2
Total	29	100.0	33	100.0

Again, some relevant points emerged. For the industries in which both genders expected to be employed, the males had the highest expectations in the science, engineering and mathematics (24.1%), while the females had the highest percentage in the undecided (21.2%). The next highest percentage for the males

was in the service industries (17.2%) while there were two for the females, the service industries and science, engineering and mathematics both with 12.1%. The males undecided rate (6.9%) was much lower than that previously reported for females (21.2%).

Again, for the most part those industrial groupings, which only males expected to enter, were traditionally male oriented-industries, for example fishing and trapping and mining, quarrying, oil and gas. This was essentially the same for those industries, which only the females expected to enter. There were a few exceptions, with the most notable being medicine and health. It was noted that for the females this was the highest expected industrial grouping (24.2%). No males expected to enter this industrial grouping at all. Another observation made was for the science, engineering and mathematics industrial grouping that traditionally had been male-dominated. In this instance, there was a relatively high percentage (12.1%) of females expecting to enter this industrial grouping.

The next set of gender data that were examined was for the actual careers to which the males and females aspired (see Table 5.60). A number of interesting features were seen in this table. Note that the table was organized in such a way as to list those careers common to both genders first, then to list those for only males and finally to list those for only females.

Table 5.60:
(N=62) Gender Differences for Career Aspirations

	Males		Females	
Career	**Frequency**	**Percent**	**Frequency**	**Percent**
Actor	1	3.4	3	9.1
Biologist	1	3.4	1	3.0
Cook	1	3.4	1	3.0
Engineer	1	3.4	1	3.0
Pilot	1	3.4	1	3.0
Writer/Journalist	1	3.4	1	3.0
Coast Guard	3	10.3	2	6.1
Computer System Analyst	1	3.4	0	0
Computer Technician	1	3.4	0	0
Hunting Guide	1	3.4	0	0
Machinist	1	3.4	0	0
Roustabout	1	3.4	0	0
Truck Driver	1	3.4	0	0
Vehicle Mechanic	1	3.4	0	0
Welder	1	3.4	0	0
Athlete	2	6.9	0	0
Chemical Engineer	2	6.9	0	0
Clergyman	2	6.9	0	0
Musician	2	6.9	0	0
Armed Forces	4	13.8	0	0
Accountant	0	0	1	3.0
Daycare Worker	0	0	1	3.0
Draftsperson	0	0	1	3.0
Nurse	0	0	1	3.0
Occupational Therapist	0	0	1	3.0
Scientists	0	0	1	3.0
X-ray Technician	0	0	1	3.0
Fashion Designer	0	0	2	6.1
Lawyer	0	0	2	6.1
Computer Operator	0	0	3	9.1
R.C.M.P Officer	0	0	3	9.1
Physician	0	0	6	18.2
Total	29	100.0	33	100.0

It should be noted that of all the careers to which the students aspired there were only 7 careers in common for males and females. Of those common careers, the males aspired to careers in the coast guard most often (10.3%), while the females aspired most often to careers in acting (9.1%). Again, of most interest was the career data for which only the males or females aspired. For the males the

most commonly aspired to careers (13.8%) were in the armed forces, while for the females it was careers as physicians (18.2%).

Of particular significance was the nature of the types of careers to which each gender aspired. For the males, they typically aspired to gender neutral careers, such as musician, or to male dominated careers, such as the armed forces, chemical engineering, and mechanic. The females appeared less likely to stay within traditionally gender-appropriate careers. While some of the females aspired to careers in female dominant areas such as nurse or daycare worker, many aspired to gender neutral careers, such as computer operator or lawyer. Still others aspired to gender nontraditional careers such as, R.C.M.P. officers or physicians.

The next set of gender data that was examined was for the actual careers that the males and females expected to enter (see Table 5.61). A number of features were emphasized in this table. Note that the table was organized in such a way as to list those careers common to both genders first, then to list those for only males and finally to list those for only females. It should be noted that of all the careers that the students expected to obtain there were only 3 careers in common for males and females. Of those common careers, both the males (6.9%) and females (9.1%) expected careers in engineering most often. The data reveal the comparison of the males and females with respect to being undecided in career expectations. The males were undecided less (6.9%) than the females (21.2%).

Table 5.61:
(N=62) Gender Differences for Career Expectations

	Males		Females	
Career	**Frequency**	**Percent**	**Frequency**	**Percent**
Cook	1	3.4	1	3.0
Writer/Journalist	1	3.4	1	3.0
Engineer	2	6.9	3	9.1
Undecided	2	6.9	7	21.2
Boat Captain	1	3.4	0	0
Coast Guard	1	3.4	0	0
Fisherperson	1	3.4	0	0
Machinist	1	3.4	0	0
Musician	1	3.4	0	0
Truck Driver	1	3.4	0	0
Vehicle Mechanic	1	3.4	0	0
Welder	1	3.4	0	0
Chemical Engineer	2	6.9	0	0
Clergyman	2	6.9	0	0
Computer Technician	2	6.9	0	0
Armed Forces	3	10.3	0	0
Computer Systems Analyst	3	10.3	0	0
Roustabout	3	10.3	0	0
Animal attendant	0	0	1	3.0
Biologist	0	0	1	3.0
Daycare Worker	0	0	1	3.0
Draftsperson	0	0	1	3.0
Medical Laboratory Technician	0	0	1	3.0
Mortician	0	0	1	3.0
Nursing Assistant	0	0	1	3.0
Occupational Therapist	0	0	1	3.0
Optometrist	0	0	1	3.0
Pharmacist	0	0	1	3.0
Physician	0	0	1	3.0
R.C.M.P. Officer	0	0	1	3.0
Social Worker	0	0	2	6.1
Computer Operator	0	0	3	9.1
Nurse	0	0	3	9.1
Total	29	100.0	33	100.0

Again, the data for careers expected by only the males or females, was of interest. For the males, the most commonly expected careers were in the armed forces, computer systems analyst, and roustabout all with a percentage of 10.3%. For the females, the most commonly expected careers were as nurses and computer operators both with a percentage of 9.1%. Of particular interest was the

nature of the types of careers to which each gender expected to obtain. For the males, they typically expected to obtain gender-neutral careers, such as musician, or, more frequently, to male-dominated careers, such as the armed forces, chemical engineering, mechanic, etc. The females appeared less likely to stay within traditionally gender-appropriate careers. While some of the females expected to obtain careers in female-dominant areas such as nursing or daycare worker, many aspired to gender-neutral careers, such as computer operator or lawyer. Still others aspired to gender-nontraditional careers such as, R.C.M.P. officers or physicians.

The next set of data to be examined for gender differences were dealing with the Spearman's rho correlations between the GED for career aspirations and the GED for career expectations. These were carried out separately for the males and females. Table 5.62 lists the comparisons between the males and females.

Table 5.62:
Gender Differences for GED Career Aspirations by GED for Career Expectations

			GED Expectations	
			Males	Females
Spearman's rho	GED Aspirations	Correlation Coefficient	.602**	.590**
		Sig. (2-tailed)	.001	.001
		N	27	26

** Correlation is significant at the .01 level (2-tailed)

As can be seen in Table 5.62, both correlations were strong and significant, however, the correlation between the GED levels for career aspirations and GED

levels for career expectations was slightly stronger for the males.

A similar correlation (see Table 5.63) was carried out to compare gender differences between the SVP levels for career aspirations and the SVP levels for career expectations.

Table 5.63:
Gender Differences for SVP Career Aspirations by SVP for Career Expectations

			SVP Expectations	
			Males	Females
Spearman's rho	SVP Aspirations	Correlation Coefficient	.686**	.557**
		Sig. (2-tailed)	.001	.001
		N	27	26

** Correlation is significant at the .01 level (2-tailed)

As can be seen in Table 5.63, both correlations were strong and significant, however, the correlation between the SVP levels for career aspirations and SVP levels for career expectations was stronger for the males.

Mean scores were compared for GED aspirations and expectations for males (see Table 5.64).

Table 5.64:
Means and Standard Deviations for GED Aspirations and Expectations for Males

	Mean	N	Std. Deviation	Std. Error Mean
GED Aspirations	3.96	27	1.26	.24
GED Expectations	4.04	27	1.37	.26

There was a difference between the mean value for the GED of aspirations (3.96) and expectations (4.04) for males. When a paired sample test was carried out the

results showed no significant difference (t =-.337. df = 26. p =.739). From this information, it was found that the males in this sample had higher career expectations than aspirations.

Mean scores were also compared for SVP aspirations and expectations for males (see Table 5.65).

Table 5.65:
Means and Standard Deviations for SVP Aspirations and Expectations for Males

	Mean	N	Std. Deviation	Std. Error Mean
SVP Aspirations	6.22	27	1.60	.31
SVP Expectations	6.19	27	1.69	.32

Again, there was a difference between the mean value for the SVP of aspirations and expectations, 6.22 and 6.19 respectively. When a paired sample test was carried out, the results showed no significant difference (t =.143. df = 26. p =.887). In this instance, aspirations were higher than expectations.

Mean scores were also compared for GED aspirations and expectations for females (see Table 5.66).

Table 5.66:
Means and Standard Deviations for GED Aspirations and Expectations for Females

	Mean	N	Std. Deviation	Std. Error Mean
GED Aspirations	4.65	26	1.13	.22
GED Expectations	4.19	26	1.02	.20

Again, there was a difference between the mean value for the GED of aspirations and expectations for females. 4.65 and 4.19 respectively. When a

paired sample test was carried out the results showed a significant difference (t = 2.287, df = 25, p =.031). Thus, career aspiration levels were significantly different from expectation levels for females, using the GED measure. Mean scores were also compared for SVP aspirations and expectations for females (see Table 5.67).

Table 5.67:
Means and Standard Deviations for SVP Aspirations and Expectations for Females

	Mean	N	Std. Deviation	Std. Error Mean
SVP Aspirations	6.77	26	1.42	.28
SVP Expectations	6.38	26	1.55	.30

Again, there was a difference between the mean value for the SVP of aspirations and expectations, 6.77 and 6.38 respectively. When a paired sample test was carried out the results showed no significant difference (t =1.264, df = 25, p =.218).

Table 5.68:
Means for GED Aspirations, SVP Aspirations, GED Expectations and SVP Expectations by Gender

		N	Mean	Std. Deviation
GED Aspirations	Male	29	3.97	1.24
	Female	33	4.73	1.10
	Total	62	4.37	1.22
SVP Aspirations	Male	29	6.21	1.57
	Female	33	6.88	1.45
	Total	62	6.56	1.53
GED Expectations	Male	27	4.04	1.37
	Female	26	4.19	1.02
	Total	53	4.11	1.20
SVP Expectations	Male	27	6.19	1.69
	Female	26	6.38	1.55
	Total	53	6.28	1.61

An analysis was carried out to determine if there were significant mean

differences with respect to gender (see Table 5.68).

Table 5.69 shows the ANOVA analysis for the mean differences for GED aspirations by gender.

Table 5.69:
Analysis of Variance Source Table for GED Aspirations and Gender

		Sum of Squares	df	Mean Square	F	Sig.
GED Aspirations	**Between Groups**	8.957	1	8.957	6.593	.013
	Within Groups	81.511	60	1.359		
	Total	90.468	61			

As can be seen from this table a significant difference was found between the GED aspirations for males and females. Females had significantly higher aspiration levels as measured by the GED for career aspirations.

Table 5.70 shows the ANOVA analysis for the mean differences for SVP aspirations by gender.

Table 5.70:
Analysis of Variance Source Table for SVP Aspirations and Gender

		Sum of Squares	df	Mean Square	F	Sig.
SVP Aspirations	**Between Groups**	6.968	1	6.968	3.063	.085
	Within Groups	136.274	60	2.271		
	Total	143.242	61			

As can be seen from this table the results approach significance. A difference was found between the GED aspirations for males and females. Females had higher aspiration levels as measured by the SVP for career aspirations.

Table 5.71 shows the ANOVA analysis for the mean differences for GED expectations by gender.

Table 5.71:
Analysis of Variance Source Table for GED Expectations and Gender

		Sum of Squares	df	Mean Square	F	Sig.
GED Expectations	Between Groups	.319	1	.319	.217	.643
	Within Groups	75.001	51	1.471		
	Total	75.321	52			

As can be seen from this table a significant difference was not found between the GED expectations for males and females, although females had higher aspiration levels as measured by the GED for career aspirations.

Table 5.72 shows the ANOVA analysis for the mean differences for SVP expectations by gender.

Table 5.72:
Analysis of Variance Source Table for SVP Expectations and Gender

		Sum of Squares	df	Mean Square	F	Sig.
SVP Expectations	Between Groups	.527	1	.527	.200	.656
	Within Groups	134.228	51	2.632		
	Total	134.755	52			

As can be seen from this table, no significant difference was found between the SVP expectations for males and females, although females had higher aspiration levels as measured by the SVP for career expectations.

The next question examined statistically, concerning gender differences and curriculum issues was: *how does academic achievement in science relate to both*

career aspirations and expectations for males and females? Spearman's rho correlations were carried out to determine the relationship between the students' average marks in science courses and level of career aspirations as measured by the GED and SVP associated with the students' aspired to careers. Table 5.73 lists the gender breakdown for the correlations between the GED for aspirations and average marks in the various science courses, as well as, the average marks in all science courses combined and the average marks in either academic or nonacademic science courses. A number of differences were seen when comparing this data for males and females. The main differences lie in the number of courses in which the results were significant, the levels of significance and the level of the correlation coefficient. For the males, most of the academic science courses, as well as the total science credits, the total academic science credits and the total nonacademic science credits were significant at the $p < .01$. The exceptions are physics 3204 which was significant at the $p < .05$ level, physics 2204 and chemistry 3202 which were not significant. For the females only two science courses were significant: chemistry 2202 and biology 3201, both of which have lower correlation coefficients than those for the males. It was noted that for the nonacademic science courses, there were negative correlation coefficients for both the males and female: however, the males' results were significant while the females were not.

Table 5.73:
Correlational Breakdown by Gender for GED Aspirations and Science Course Averages, Total Science Credits, Academic Science Credits, and Nonacademic Science Credits

Males			Biology 2201	Chemistry 2202	Physics 2204	Physical Science 2205	Science Tech. & Society 2206
Spearman's rho	GED Aspirations	Correlation Coefficient	.590**	.467**	.324	.494	.256
		Sig. (2-tailed)	.005	.038	.478	.213	.291
		N	21	20	7	8	19
Females							
Spearman's rho	GED Aspirations	Correlation Coefficient	.330	.396*	.601	1.000	-.226
		Sig. (2-tailed)	.069	.037	066	♦	529
		N	31	28	10	3	10

Males						
Biology 3201	Chemistry 3202	Physics 3204	Environmental Science 3205	Sccredit	Academic	Nonacademic
.810**	.374	.764*	.044	.568**	.583**	-.455*
001	.408	.016	.904	.001	.001	013
13	7	9	10	29	29	29
Females						
.490**	.227	.267	.500	.283	.302	-.133
007	.351	318	.667	110	.088	460
29	19	16	3	33	33	33

** Correlation is significant at the .01 level (2-tailed)
* Correlation is significant at the .05 level (2-tailed)
♦SPSS did not calculate a value.

A similar Spearman's rho correlations was carried out to determine the relationship between the students' average marks in science courses and level of career aspirations as measured by the SVP associated with the students' aspired-to careers. Table 5.74 lists the gender breakdown for the correlations between the GED for aspirations and average marks in the various science courses, as well as, the average marks in all science courses combined and the average marks in either

academic or nonacademic science courses.

Table 5.74:
Correlational Breakdown by Gender for SVP Aspirations and Science Course Averages, Total Science Credits, Academic Science Credits, and Nonacademic Science Credits

			Biology 2201	Chemistry 2202	Physics 2204	Physical Science 2205	Science Tech. & Society 2206
Males							
Spearman's rho	SVP Aspirations	Correlation Coefficient	.609**	.605**	.507	.268	.156
		Sig. (2-tailed)	.003	.005	.246	.521	.524
		N	21	20	7	8	19
Females							
Spearman's rho	SVP Aspirations	Correlation Coefficient	.266	.324	.521	.866	-.592
		Sig. (2-tailed)	.149	.093	.122	.333	072
		N	31	28	10	3	10

Males						
Biology 3201	**Chemistry 3202**	**Physics 3204**	**Environmental Science 3205**	**Scredit**	**Academic**	**Nonacademic**
.702**	.538	.807**	-.065	.467*	.441*	-.338
.007	.213	.009	.857	.011	.017	.073
13	7	9	10	29	29	29
Females						
.446*	.188	.325	.000	.211	.192	.015
.015	.440	.219	1.000	.238	.286	.934
29	19	16	3	33	33	33

** Correlation is significant at the .01 level (2-tailed)
* Correlation is significant at the .05 level (2-tailed)

As with the previous data a number of differences were seen when comparing these data for males and females. Again, the main differences lie in the number of courses in which the results were significant, the levels of significance and the level of the correlation coefficient. For the males, most of the academic science courses, as well as, the total nonacademic science credits were significant

at the $p < .01$. The exceptions were sccredits, the total average of all science courses, and the academic science credits which were significant at the $p < .05$ level, as well as physics 2204, chemistry 3202, and the nonacademic science credits which were not significant. For the females only one science course was significant namely, biology 3201. This had a lower correlation coefficient than for the males. It was interesting to note that for the nonacademic science courses, there were negative correlation coefficients for the males and a positive correlation coefficient for the females, however neither was significant.

Another Spearman's rho correlation was carried out to determine the relationship between the students' average marks in science courses and level of career aspirations as measured by the GED level associated with the students' expected careers. Table 5.75 lists the gender breakdown for the correlations between the GED for expectations and average marks in the various science courses, as well as, the average marks in all science courses combined and the average marks in either academic or nonacademic science courses. As with the previous data a number of differences were seen when comparing it for males and females. This time, the differences were not as straightforward. In some cases, the correlation coefficient was higher for the males, as was the case with chemistry 2202, biology 3201, and the nonacademic average. In other cases the females' correlation coefficients were higher, as was the case with biology 2201, physical science 2205, environmental science 3205, the sccredit average, and the academic

average. For the males, some of the academic science courses, as well as the total science credits, and the total nonacademic science credits were significant at the p < .01. The exceptions were the academic science credits which were significant at the p <.05 level, as well as biology 2201, physics 2204, chemistry 3202, and physics 3204 which were not significant.

Table 5.75:
Correlational Breakdown by Gender for GED Expectations and Science Course Averages, Total Science Credits, Academic Science Credits, and Nonacademic Science Credits

Males			Biology 2201	Chemistry 2202	Physics 2204	Physical Science 2205	Science Tech. & Society 2206
Spearman's rho	GED Expectations	Correlation Coefficient	.381	.663**	-.400	.519	.374
		Sig. (2-tailed)	.108	.003	.431	.188	.140
		N	19	18	6	8	17
Females							
Spearman's rho	GED Expectations	Correlation Coefficient	.467*	.572**	.524	1.000	.337
		Sig. (2-tailed)	.019	.004	.227	♦	.460
		N	25	23	7	2	7

Males						
Biology 3201	Chemistry 3202	Physics 3204	Environmental Science 3205	Sccredit	Academic	Nonacademic
.808**	.321	.517	.086	.488**	.467*	-.498**
.001	.482	.154	.825	.010	.014	.008
12	7	9	9	27	27	27
Females						
.518*	.076	.260	1.000	.500**	.471*	-.052
.011	.787	.391	♦	.009	.015	.800
23	15	13	2	26	26	26

** Correlation is significant at the .01 level (2-tailed)
* Correlation is significant at the .05 level (2-tailed)
♦ SPSS did not calculate a value.

For the females a number of science courses were significant. Chemistry 2202, physical science 2205, environmental science 3205 and the sccredit average were all significant at the $p < .05$ level. Biology 2201, biology 3201 and the academic science course average were all significant at the $p < .05$ level. It was interesting to note that for the nonacademic science courses, there was a negative correlation coefficient for the males, $p < .01$, and a positive correlation coefficient for the females which was not significant.

A final Spearman's rho correlations was carried out to determine the relationship between the students' average marks in science courses and level of career aspirations as measured by the SVP associated with the students' expected careers. Table 5.76 lists the gender breakdown for the correlations between the SVP for career expectations and average marks in the various science courses, as well as, the average marks in all science courses combined and the average marks in either academic or nonacademic science courses. As with the previous data a number of differences were seen when comparing it for males and females. Again, the differences were not as straightforward. In some cases, the correlation coefficient was higher for the males, as was the case with chemistry 2202, biology 3201, and the Nonacademic average. In other cases the females' correlation coefficients were higher, as was the case with biology 2201, the sccredit average, and the academic average. For the males, some of the academic science courses, as well as the nonacademic science credits were significant at the $p < .01$. The

exceptions were the academic science credits which were significant at the p <.05 level, as well as biology 2201, physics 2204, physics 3204, and chemistry 3202 which were not significant.

Table 5.76:
Correlational Breakdown by Gender for SVP Expectations and Science Course Averages, Total Science Credits, Academic Science Credits, and Nonacademic Science Credits

			Biology 2201	Chemistry 2202	Physics 2204	Physical Science 2205	Science Tech. & Society 2206
Males							
Spearman's rho	SVP Expectations	Correlation Coefficient	.422	.611**	.358	.537	.258
		Sig. (2-tailed)	.072	.007	.486	.170	.317
		N	19	18	6	8	17
Females							
Spearman's rho	SVP Expectations	Correlation Coefficient	.485*	.565**	.567	♦	.037
		Sig. (2-tailed)	.014	.005	.184	♦	.937
		N	25	23	7	2	7

Males						
Biology 3201	Chemistry 3202	Physics 3204	Environmental Science 3205	Sccredit	Academic	Nonacademic
.757**	.538	.365	-.198	.299	.408*	-.513**
.004	.213	.334	610	.130	.035	.006
12	7	9	9	27	27	27
Females						
.490*	.163	.196	♦	.472*	.469*	-.009
.018	.563	.521	♦	.015	.016	.965
23	15	13	2	26	26	26

** Correlation is significant at the .01 level (2-tailed)
* Correlation is significant at the .05 level (2-tailed)
♦ SPSS did not calculate a value.

For the females a number of science courses were significant. Chemistry 2202 was significant at the p < .01 level. Biology 2201, biology 3201 the sccredit

course average and the academic science course average were all significant at the $p < .05$ level. It should be noted that for the nonacademic science courses, there was a negative correlation coefficient for the males, $p < .01$, and a negative correlation coefficient for the females which was not significant.

It terms of gender comparison there are only a few points left to make. A Spearman's rho correlation was carried out to compare the GED and SVP aspiration levels of the parents' current careers and the GED and SVP levels for the students' career occupations and career expectations. The only significant result was for the females' data in which there was a positive correlation between the GED for the mothers' career and the GED for career expectations. The correlation coefficient was .438, $p = .032$.

The last section for analysis dealt with comparisons of this current research and that of the 1989 *Youth Transition into the Labour Market* (YTML) project conducted by Sharpe and Spain (1991a). A few of the highlighted comparisons were included. The first comparison was in the percentages of students giving numbers of responses to the career aspiration question (see Table 5.77).

Table 5.77:
Comparison of Career Choice Response Frequencies

	YTLM		Current Study	
# of Responses	**Frequency**	**Percent**	**Frequency**	**Percent**
One Choice Given	6089	82.3	54	87.1
Two Choices Given	846	11.4	6	9.7
Three Choices Given	86	1.2	2	3.2
Don't know	160	2.2	0	0
No response	209	2.8	0	0
Total	7390	100.0	62	100.0

As seen from this comparison there was little difference in terms of numbers of responses given for the YTLM study and the current study. The most outstanding difference was that for the current study no students had no response or didn't know what ideal careers to which they would be aspiring. Table 5.78 compares the major industrial groupings to which the students in the YTLM and current studies are aspiring.

Table 5.78:
Frequency Comparison of Industrial Occupational Aspirations

	YTLM		Current Study	
Occupational Group	**Frequency**	**Percent**	**Frequency**	**Percent**
Managerial, Administrative, and Related Occupations	680	9.2	1	1.6
Mining and Quarrying including Oil	6	.08	1	1.6
Teaching and Related Occupations	753	10.2	1	1.6
Machining and Related Occupations	74	1.0	2	3.2
Product Fabricating, Assembling and Repairing	400	5.4	2	3.2
Religion	28	0.4	2	3.2
Social Sciences and Related Fields	762	10.3	2	3.2
Clerical and Related Occupations	505	6.8	3	4.8
Sports and Recreation	42	0.6	3	4.8
Transport Equipment Operating Occupations	288	3.9	3	4.8
Medicine and Health	1344	18.2	9	14.5
Natural Sciences, Engineering and Mathematics	989	13.4	9	14.5
Artistic, Literary, Performing Arts, and Related	408	5.5	10	16.1
Service	1134	15.3	14	22.6
Construction Trades	284	3.8	0	0
Forestry and Logging	127	1.7	0	0
Sales	76	1.0	0	0
Fishing and Trapping	25	0.3	0	0
Don't Know/ No Response/Other	401	5.4	0	0
Total	7390	100	62	100

A number of interesting points were drawn from these comparisons. For the YTLM study the greatest percentage (18.2%) of the students aspired to careers in medicine and health followed by service (15.3%), and natural sciences

engineering and mathematics (13.4%) while for the current study the greatest percentage was in service (22.6%), followed by artistic, literary and performing arts (16.1), and natural sciences engineering and mathematics (14.5%).

It was interesting to note that the results were quite similar for the natural science, engineering and mathematics category. Other similarities included transport equipment operating with 3.9% for the YTLM and 4.8% for the current study, clerical and related occupations with 6.8% and 4.8% respectively, and product fabricating, assembling, and repairing with 5.4% and 3.2% respectively. Other points of interest included those industrial groupings that the students in the current study did not aspire to at all. These were service, construction, forestry and logging, sales, and fishing and trapping. In addition, the students in the current study did not have any other, do not know or no response categories.

The next area for comparison was in terms of student plans for the following year after high school graduation (see Table 5.79).

Table 5.79:
Frequency Comparison of Plans for Next Year

	YTLM		Current Study	
Response	**Frequency**	**Percentage**	**Frequency**	**Percentage**
No response	327	4.4	0	0
Undecided	202	2.7	2	3.2
Work	614	8.3	12	19.4
Return to High School	355	4.5	13	21.0
Plan to continue education	4066	55.0	35	56.5
Take the year off	563	7.6	0	0
Other Responses	1283	17.4	0	0
Total	7390	100	62	100

A number of interesting comparisons were made between the two sets of data. The most outstanding comparison was in terms of the similarity of frequencies for students planning to continue into post-secondary education. The YTLM students responded with a percentage of 55.0% while the students in the current study responded with a percentage of 56.5%. Note that under the YTLM section there was a response category "other responses". This included two responses that were not found in the current study, "like to continue education but may have to work" and " shall probably continue education but would rather work" (Sharpe and Spain (1991a). Another interesting comparison was in terms of those students planning to return to high school. The YTLM study had a percentage response of only 4.5% while the current study had an alarming response percentage of 21.0%. Yet, another finding that bears mentioning was with respect to the responses of students planning to directly enter the workforce. In the YTLM study 8.3% of the students planned to work while 19.4% of the students in the current study planned to do so.

The analysis section is concluded. Much information has been put forward and will be commented on in chapter six, the conclusion and recommendations section of this thesis.

CHAPTER 6

Findings, Conclusions and Recommendations

This final chapter will discuss the important and relevant findings, and based on these findings, provide recommendations both for professionals in the educational system and for further research.

These findings will be examined with reference to the research questions outlined in chapter one. They will be organized in terms of findings from the major research question and the subsidiary questions. An important caveat with respect to these findings is that the sample size was quite small and while conclusions can be drawn from these data, it is difficult to generalize these findings or conclusions to wider populations. Rather, the data gathered and conclusions drawn may be used as a guide for educational policy-making and to aid further research.

Findings and Conclusions

Research finding 1: Industrial Groupings for Aspired-to Careers.

The first major finding was dealing with the industrial groupings for the aspired-to careers that the students listed. The most commonly aspired-to industries were: service; artistic and literary; medicine and health; and science, engineering and mathematics; respectively. While specific areas are not mentioned these results are similar with respect to level of aspiration for the

research findings of Stevens and Cho (1985). While the percentages are not identical, these results closely parallel the finding from an earlier study by Sharpe and Spain (1991), in which the top four industrial groupings were: medicine and health; service; science, engineering, and mathematics; and social sciences; respectively. The major difference between these two findings is in terms of the artistic and literary industries. This may be because music careers fall under this industrial grouping and that music has a very strong influence and tradition in this geographic locale. Thus, a relatively high number of students aspired to careers in the creative areas.

These finding are different from those of Conroy (1997) in which the vast majority of those polled aspired to professional careers, followed by semi-skilled careers and finally labour trades.

In terms of actual aspired-to careers, there were a fairly high number of careers listed by the students. Thirty-two careers were listed by the sixty-two students. As is typical with students, the aspired-to careers are relatively high in terms of socioeconomic levels. This is supported by the GED and SVP levels for the aspired-to careers indicated. The most frequently aspired-to career was that of physician, followed by coast guard, armed forces, acting, Royal Canadian Mounted Police, and computer operator. When examining the list of aspired-to careers it is interesting to note that for the most part the careers listed are those that are found on this isolated island area. Therefore, students are not aspiring to

careers to which they are not typically exposed. It is important to note that no students aspired to the very traditional local careers of fishing or that of fishplant worker. Presumably, the limited employment opportunities afforded to these areas as a result of the cod moratorium and limited resources have influenced some of these students away from aspirations in this area.

Research finding 2: Necessary Factors for Obtaining Aspired-to Careers.

In terms of the perceived factors necessary for the students to have their aspired-to careers, a majority of them indicated that some form of post-secondary education must be obtained. This is in keeping with the plans that these students had for the following year. A majority of the students planned to attend university or a college in the fall of 1998. This is in keeping with findings of Apostal and Bilden (1991), Dunne, Elliott and Carlson (1981), Rojewski (1995), Walberg (1989), and Walsh (1989) in which a majority of their research group planed to attend post secondary as well

A large number of students planned to return to high school, either to finish their program or to upgrade in order to be eligible to enroll in university or college programs. Thus, it appears that a majority of the students recognize the fact that there are few job opportunities for individuals with limited skills out of high school. This is further supported by the current educational and career status of these former students (see table 4.15, page 86). While a majority of these students

are attending either college or university, very few are actively employed. An interesting statistic emerged from this information. Far more students than initially indicated, returned to high school. Presumably these students did not do as well as they had expected to and therefore, had to return to upgrade their marks in order to meet the entrance requirements for post-secondary training.

Research finding 3: Industrial Groupings for Career Expectations.

For career expectations, a number of interesting points emerge from the data. The most common industrial grouping for expected careers was that of science, engineering, and mathematics followed by service, and medicine and health. These results are similar to those of Duncan (1961) in which the majority of students expected to be employed in careers at the medium-high level. Similar findings were found by Rojewski (1995). It appeared that these areas delineated the students in terms of academic ability. Generally, those academically able students enter into the more challenging fields while those less able students enter the less challenging fields. It can be noted that a relatively high number of students were undecided as to what career they expect to be entering. It is not uncommon for young people to be undecided about career paths however; it is an area of concern for parents, teachers, and counselors. Ideally, students should have a general idea of the educational and career paths that they are to take after completion of high school. It is interesting to note that these students had no

problems indicating aspired-to careers but had more difficulty indicating expected careers. Another area shown is the fact that a few students expected to be working in fishery-related careers, either as fisherpersons or plant workers. Thus, a few students, while aspiring to other careers saw themselves remaining in this immediate locale and continuing on in their parent's profession.

Research finding 4: Expected Careers.

In terms of actual career expectations, the most frequently expected career was that of engineer followed by roustabout, nurse, computer systems analyst, computer operator, and member of the armed forces. These results are quite different from the actual career listings in the research by Rojewski (1995) in which students listed: clothing machine worker, athlete, biological/life scientist, nurse, and miner. Again, it is interesting to note that while a fairly high number of different careers were listed, the majority of these careers can be found locally. This may be an indication that students are not exposed to enough varied careers and career information during their schooling.

Research finding 5: A Comparison of Career Aspirations and Career Expectations.

When career aspirations and career expectations were compared, a number of interesting findings emerge. A comparison of the major industrial groupings for the career aspirations was crosstabulated with the major industrial groupings

for the career expectations. Those major industrial groups that were consistent for both career aspirations and career expectations included: religion; teaching; clerical; mining, quarrying and oil and gas; machining; and product fabricating; all of which are relatively lower level industrial groups, arguably with the exception of teaching and religion. Therefore, it would seem appropriate to aspire to and expect these careers. For some higher level major industrial groups, such as science, engineering and mathematics and medicine and health, there are some differing results. In the case of science, engineering and mathematics, a relatively high percentage of those aspiring to this industrial group also expected to be working in this area. For medicine and health, approximately half of the students aspiring to these occupations actually expected to be working in these fields. The relatively high numbers of individuals aspiring to careers as medical doctors, but very few actually expecting to be employed as such, can explain this. Those individuals both aspiring to and expecting careers in other medical areas such as nursing keep the percentage high in this area. Thus, those academically able students aspiring to careers in science, engineering, and mathematics, as well as, medicine and health, also tend to expect careers in these areas. One would expect the more capable students to have both career aspirations and career expectations that are closely related. In fact, almost half of the sample had matching career aspirations and career expectations. When the aspirational level of the aspired-to careers was compared with the aspirational level of the expected careers some

interesting facts emerge. Aspirational levels for both aspired-to careers and expected careers were measured by both the GED and SVP. When the GED levels were correlated for aspired-to careers and expected careers, a strong significant relationship was found. This is also supported by the fact that when scores were compared for the GED levels for career aspirations and career expectations, no significant difference was found. Similar findings were found when the SVP levels were correlated for aspired-to careers and expected careers, an even stronger significant relationship was found. This is also supported by the fact that when scores were compared for the SVP levels for career aspirations and career expectations, no significant difference was found as well. Thus, for these students the aspirational levels of aspired-to careers are in line with the aspirational levels of expected careers. It can be concluded that most of the students in this study have set realistic limits on their career aspirations in so much as they correspond to their career expectations. These results are higher than those found by Stevens and Mason (1994) in which only slightly more than half of the students had aspirations and expectations attuned to one another.

Research finding 6: Academic Achievement in Science and Aspiration Levels.

In terms of the factors that affect career aspirations and career expectations or relationships between factors and career aspirations and career expectations, there are many notable findings. The first aspect for comment is the relationship

between levels of aspiration for aspired-to careers and academic achievement in science courses. In the correlation between the GED level for aspired-to careers and the total average mark for all science courses, there was a strong significant correlation. This was also the case for the total average mark for the academic science courses, which include biology, chemistry, and physics in the level two, and the level three courses. When the academic science courses were examined individually a strong significant relationship was found for the level two biology, chemistry, and physics courses, as well as, the level three biology and physics courses. Collectively the nonacademic science courses, which include physical science, science-technology-and-society, and environmental science, were found to have a relatively strong and significant negative correlation to levels of aspiration as measured by the GED for the aspired-to careers. Individually, these nonacademic science courses did not have significant correlations.

Similar results were found for the correlation between science-course average marks and aspiration levels as measured by the SVP for the aspired-to careers. A relatively strong significant relationship was found between the total average mark for all science courses taken and the SVP level. This was also the case for the total average marks for the academic science courses. When the academic science courses were examined individually a strong significant relationship were found for the level two biology, chemistry, and physics courses, as well as, the level three biology and physics courses. Collectively the

nonacademic science courses were found to have a negative correlation to levels of aspiration as measured by the SVP for the aspired-to careers. However, this correlation was not significant. Individually these nonacademic courses also did not show significant correlations.

It can be concluded that generally, higher marks in all the science courses are related to higher levels of aspiration, as measured by the GED and SVP for aspired-to careers. This is also the case for academic science courses taken, but it also appears that higher average marks in the nonacademic science courses are related to lower levels of career aspirations.

Research finding 7: Academic Achievement in Science and Expectation Levels.

Aspiration levels were also measured for the expected careers and correlations carried out between GED levels and science course marks. In the correlation between the GED level for expected careers and the total average mark for all science courses, there was a strong significant correlation. This was also the case for the total average mark for the academic science courses. When the academic science courses were examined individually, a strong significant relationship was found for the level two biology and chemistry courses, as well as, the level three biology course. Collectively the nonacademic science courses were found to have a relatively strong and significant negative correlation to levels of aspiration as measured by the GED for the expected careers. However,

individually these nonacademic science courses did not have significant correlations.

Similar results were found for the correlation between science-course average marks and aspiration levels as measured by the SVP for the expected careers. A relatively strong significant relationship was found between the total average mark for all science courses taken and the SVP level. This was also the case for the total average marks for the academic science courses. When the academic science courses were examined individually, strong significant relationships were found for the level two biology and chemistry courses, as well as, the level three biology course. Collectively the nonacademic science courses were found to have a negative correlation to levels of aspiration as measured by the SVP for the aspired-to careers however, this correlation was not significant. Individually these nonacademic courses also did not show significant correlations.

When the correlational analyses involving academic achievement, GED's, and SVP's, are looked at in conjunction with one another the conclusion which can be drawn is that achievement in academic science courses is related to both career aspirations and career expectations. That is, the aspirational level of career aspirations and career expectations, as measured by the GED and the SVP levels, are positively related to overall student performance in science courses. This is most evident in academic science courses.

It can be concluded that generally, higher marks in all the science courses

are related to higher levels of aspiration, as measured by the GED and SVP for expected careers. This is also the case for academic science courses taken, but it also appears that higher average marks in the nonacademic science courses are related to lower levels of career aspirations. These findings (6 and 7) are supported by the literature in that a number of studies have found that there is a relationship between academic achievement and, educational and career aspirations and expectations (Anisef et al., 1980; Genge, 1996; Mau et al., 1995; McGrath, 1993; Noeth et al., 1984; Odell, 1988; Powlette and Young, 1996; Smith, 1991).

In terms of results, most of the remaining discussion of findings is dealing with data that did not have statistically significant results. This is noteworthy in of itself in that, lack of statistical significance can be a significant finding. In many cases the fact that there was no significant relationship can be interpreted to mean that there is no relationship between that particular factor being examined and the aspirational levels indicated by the GED and SVP levels of the aspired-to and expected careers. However, much of the time some discussion will include trends that are found in these data keeping in mind the fact that the significance levels were such that these data can not be accepted as statistically significant. In addition, much of the remaining discussion deals with analyses of various factors between GED and SVP for aspired-to careers as well as, GED and SVP for expected careers. Rather than deal with each GED and SVP result individually,

where possible, conclusions will be drawn on these factors as a whole.

Research finding 8: Course Choice.

Curriculum factors were examined for relationships to career aspirations and career expectations. Reasons for course choice can be informative. The most common response for course choice influence was that of interest, followed by help with post-secondary education, help with future plans, and the courses are needed for a particular career choice. Some of these responses indicate thought about career aspirations and expectations. In fact, slightly over one third of the class considered career aspirations and expectations when making course choices. The high percentage of students indicating interest as an influence on course choice may be a positive finding if this interest level leads to career choices in these areas. This is the case for a majority of the students in this research study. Half of the students, who said that course choice had helped with career plans, indicated that some courses that they had taken created interests, which may lead to career choices in these areas. These findings are supported by the literature. Many studies have indicated a relationship between academic interests and high levels of educational and career aspirations and expectations (Cherry and Gear, 1987; Fisher and Griggs, 1995; González, 1997; Lewko et al., 1993; Noeth et al., 1984; Stone and Wang, 1990)

Research finding 9: Course Choice and Levels of Aspirations and Expectations.

Course choice helping with career plans was correlated to aspirational levels, as measured by GED and SVP for both aspired-to careers and expected careers. While the findings are not statistically significant, there is a trend towards a positive relationship between students finding courses helpful and higher career aspirations and expectations. Thus, if a student found a course or courses helpful in making career or educational plans then that student may be expected to have higher career aspirations and expectations.

Research finding 10: Extra-Curricular Activities and Levels of Aspirations and Expectations.

A similar trend was found for participation in extra-curricular activities. While no conclusive statements can be made based on these data, as a result of a lack of significance, the trends for both career aspirations and career expectations suggest that there may be a positive relationship between students participation in extra-curricular activities and levels of aspirations as measured by GED's and SVP's.

Research finding 11: Guidance and Levels of Aspiration and Expectation.

Another curricular area dealt with participation in information sessions with the guidance counselor. An important point to note is that slightly over one third

of the subjects participated in sessions with the guidance counselor and of those approximately two thirds found the session useful while one third did not. These findings in keeping with some of the literature where it has been reported those guidance counselors have been considered particularly useful (Cherry & Gear.1987: Mckenna & Ferrero. 1991: Noeth et al.. 1984: Warton & Cooney. 1997).

One would expect that. having sought out the guidance counselor and obtained career information from them. aspirational levels would be significantly higher. This is not the case however. the trends for both career aspirations and career expectations suggest that there may be a slight positive relationship between students participation in information sessions with the guidance counselor and levels of aspirations as measured by GED's and SVP's.

Research finding 12: Teachers and Levels of Aspiration and Expectation.

Teacher influence on educational or career plans is the last curricular area of examination. It would be expected that teachers play a significant role in student educational and career development. This is not the case. As with the guidance counselor, just under one third of the students indicated that teachers had influenced career or educational plans while two thirds indicated that teachers did not play a role in future plans. Of those students that indicated a positive influence by teachers, no significant relationship was obtained between this influence and

their GED and SVP levels. However, the trends for both career aspirations and career expectations suggest that there may be a slight positive relationship between students indicating that there has been some teacher influence on their career or educational plans, and levels of aspirations particularly as measured by GED's. This trend is not evident when measuring aspirations by SVP's.

The literature findings on the usefulness of teachers and counselors indicate that in many instances they do play a role in career aspirations and expectations (Cherry & Gear, 1987; Dick & Rallis, 1991; Fisher and Griggs, 1995; McKenna and Ferrero, 1991; Noeth et al., 1984; Warton & Cooney, 1997). Other findings indicated little influence by teachers and/or counselors (Arnold et al, 1988; González, 1997; Kotrlik & Harrison, 1989; Powlette & Young, 1996; Stevens & Mason, 1994).

Family variables were examined for relationships to career aspirations and career expectations. Parental levels of education were crosstabulated with aspirational levels as measured by the GED and SVP for aspired-to careers and expected careers.

Research finding 13: Parental Levels of Education and Levels of Aspirations and Expectations.

When examining the relationship between the fathers' level of education and students' aspirational levels, no significant results were found. However, it

does appear that there may be a slight positive trend for the relationship between the fathers' level of educational attainment and the students' level of aspirations, as measured by the GED and SVP for both, career aspirations and career expectations.

Similar results were found for the relationship between the mothers' level of education and students' aspirational levels. Again, no significant results were found. While no conclusions can be drawn from these data, mainly due to the lack of significance, there appear to be trends worth discussing. It appears that there may be a small relationship between the mothers' level of educational attainment and the students' level of aspirations, as measured by the GED and SVP for both career aspirations and career expectations.

Findings in the literature suggest mixed results in terms of the relationships between parental educational levels and student aspirations and expectations. Some findings suggest little or no relationship between these factors (Odell, 1988; Trusty et al., 1997). Other studies have found relationships between these factors (Conroy, 1997; Larson, Daniels, Schriger, & Freeman, 1993; Lewko et al., 1993; McWhirter et al., 1996; Sariagiani, Wilson, Peterson, & Vicary, 1990; Wilson & Wilson, 1991).

Research finding 14: Parental Occupations Versus Student's Aspired-to Occupations.

Another family variable that was examined was that of the relationship between parental occupation and student occupation in terms of major industrial groupings. In terms of the relationship between the fathers' industrial groups and the students' industrial groups, an important finding was that no students aspired to careers in the same industries as their fathers. For the data on the mothers' industrial groupings, a small proportion of students aspired to careers in similar industries as their mothers. These industrial groupings were clerical, and medicine and health. Similar findings were found for the relationship between the industrial groupings for students' expected careers and fathers' industrial groupings. This time only one student expected to be in the same industry as his or her father. This was the fishing and trapping industry. For the relationship between the industrial groupings for students' expected careers and mothers' industrial groupings, three industries were related. They were service, processing, and medicine and health receptively. Thus it can be concluded that the vast majority of students do not seem to look at the careers in which the fathers are involved, and only slightly more students look on the mothers' careers, in terms of possible careers for themselves.

Research finding 15: GED and SVP Levels for Parental Careers and Student Aspired-to and Expected Careers.

Parental occupations were assigned GED and SVP levels and these were correlated with the GED and SVP levels for the aspired-to and expected careers of the students. The only result that was close to being significant was that of the GED level of the fathers' occupation and the students' GED level for expected careers. None of the results was significant so we conclude that there is no relationship between the aspirational levels of students' aspired-to or expected careers and the aspirational levels of the parental occupations. This is counter to many findings in the literature in which relationships between parental occupations and educational or career aspirations and expectations were found (Conroy, 1997; Lee, 1984; Lewko et al., 1993; Marjoribanks, 1986; McDonald & Jessell, 1992; McNair and Brown, 1983; Way & Rossmann, 1996; Wilson and Wilson, 1991). However, it is supported by some findings which suggest little relationship between parental occupation and student aspirations and expectations (Mau et al., 1995; McWhirter et al., 1996; Odell, 1988; Smith, 1991; Stone and Wang, 1990; Trusty et al., 1997).

Research finding 16: Family Influence on Aspired-to and Expected Careers.

Family influence was examined for correlations between GED and SVP levels for aspired-to and expected careers. No conclusive statements can be made

based on these data, because of a lack of significance. However, the trends for both career aspirations and career expectations suggest that there may be a slight positive relationship between students indicating that there has not been a family influence on their career or educational plans, and levels of aspirations as measured by GED's and SVP's. This is interesting in that these results are counter to what would be expected. One would think that family influence into educational and career aspirations and expectations would lead to higher levels of aspirations and expectations. This is supported by findings of McNair and Brown (1983), Noeth et al. (1984) Odell (1989), Powlette and Young (1996), Stone and Wang (1990) and Wilson and Wilson (1991), to name a few. These findings are not significant and therefore it can be concluded that no relationship exists between family influence and aspirational levels. Nevertheless, the trends suggest that the greater the amount of family influence the lower the levels of aspirations and expectations.

Research finding 17: Media Influence on Career Aspirations and Expectations.

Another area that was examined was that of media influence on aspirational levels as measured by the GED and SVP for aspired-to and expected careers. Crosstabulations were examined between levels of aspirations and whether the media had helped with educational or career plans. No conclusive statements can be made based on these data, because of a lack of significance. However, the

trends for both career aspirations and career expectations suggest that there may be a slight positive relationship between students indicating that there have been no media influence on their career or educational plans, and levels of aspirations as measured by GED's. The opposite appears to be the case for the SVP's. The students were also asked how media sources were helpful in their educational and career planning. While slightly less than half of the students found media sources helpful, a majority of those that did get help from these sources indicated that they helped to develop specific career interests and gained exposure to varied careers. The literature findings indicate that media sources are useful to students to help them gain information regarding education and careers (Arnold et al., 1988; Cherry & Gear, 1987; González, 1997; McKenna and Ferrero, 1991).

Research finding 18: Use of Computers and Career Aspirations and Expectations.

Along with examination of media sources, the usefulness of computers for obtaining educational and career information was examined. Almost 90% of the students indicated that they used computers. When computer use was crosstabulated with levels of aspiration, as measured by the GED and SVP for aspired-to and expected careers, it was found that there are differing trends for both career aspirations and career expectations. For career aspirations, these data suggest that there may be a slight positive relationship between students indicating that they use computers, and levels of aspirations as measured by GED's and

SVP's. The opposite appears to be the case for the career expectations. These data suggest that there is a slight positive relationship between students indicating that they do not use computers and levels of aspirations as measured by GED's and SVP's. Since these findings are not statistically significant and the trends tend to be ambiguous it is difficult to make any conclusion other than there is not a relationship between computer use and aspirational levels for aspired-to and expected careers.

Research finding 19: Use of the Internet and Career Aspirations and Expectations.

The final media question examined the relationship between the internet and educational and career aspirations and expectations. No conclusive statements can be made based on these data, because of a lack of significance. However, the trends for both career aspirations and career expectations suggest that there may be a slight positive relationship between students indicating that they did not use computers and/or the internet to obtain career information, and levels of aspirations as measured by GED's and SVP's. Since these trends are slight and the results are not statistically significant, it can be concluded that there is no relationship between computer and internet use and educational and career aspirations and expectations. This is not what would have been expected. Presumably, use of computers and the internet would expose students to greater varieties of careers and increase technical skills which should translate into higher

level aspirations. These findings may be due to the fact that internet use is quite new in this area and is still quite limited in terms of access for students. Many teachers are inexperienced in the computer and internet use themselves and can offer little aid to students in terms of searching the World Wide Web for educational and career information.

Gender differences were examined and a number of interesting points emerged.

Research finding 20: Gender Differences for Industrial Groupings.

For industrial groupings, the majority of careers to which the males aspired were male-oriented while the majority of careers to which the females aspired were female-oriented. Notable exceptions were medicine and health, the highest aspired-to industrial grouping for the females and not aspired-to at all for the males. Science, engineering and mathematics also had a relatively high number of females aspiring to this industrial grouping. Thus, the females more than the males are open to enter careers that are less gender-specific. This is an interesting finding in light of the research that indicates that women are often underrepresented in science and engineering professions (Dick & Rallis, 1991; Farmer et al., 1995; Powlette & Young, 1996). Similar results were found for the examination of the relationship between aspiration levels and industrial groupings for expected careers. The most notable difference was that more females than

males reported being undecided about career expectations.

Research finding 21: Gender Differences for Aspired-to Careers.

In terms of actual careers the above-mentioned trend continues. Of particular interest is in the nature of the types of careers to which each gender aspired. Males typically aspired to gender neutral careers, such as musician, or to male dominated careers, such as the armed forces, chemical engineering, and mechanic. Females appeared less likely to stay within traditionally gender-typical careers. While some of the females aspired to careers in female dominant areas such as nurse or daycare worker, many aspired to gender neutral careers, such as computer operator or lawyer. Still others aspired to gender nontraditional careers such as, R.C.M.P. officers or physicians. Similar results were found for expected careers. Similar findings are reported by Farmer (1983) as well as McMahon and Patton (1997) that females tend to be less gender-stereotyped than males. A notable finding was that more females than males were undecided about career expectations.

Research finding 22: Gender Differences in GED and SVP Levels for Aspirations and Expectations.

Aspirational levels as measured by the GED and SVP for aspired-to and expected careers, were examined for gender differences. When these data were

analyzed. a number of important points emerged. The GED and SVP levels for aspired-to careers are slightly more strongly correlated to the GED and SVP levels for expected careers. for males than for females. In both cases. the correlations were significant. In addition. a significant difference was found between the GED levels for aspired-to careers and expected careers for females. No significant differences were found between the GED and SVP levels for aspired-to and expected careers for males or for the SVP levels for aspired-to and expected careers for females. Thus. females tend to aspire to significantly higher careers and expect to enter significantly lower careers. in terms of GED levels. than do males.

Research finding 23: Gender Differences in Mean GED and SVP Levels for Aspirations and Expectations.

When mean GED and SVP levels were compared between males and females another significant finding emerged. Females had significantly higher aspiration levels. as measured by the GED for aspired-to careers. than did males. The GED levels for expected careers and the SVP levels for aspired-to and expected careers did not show significant mean differences between males and females. although for each case females do exhibit higher aspirational levels than do the males. Findings from the literature are mixed with respect to gender differences in aspiration and expectation levels. Some findings have indicated that

females do have higher aspiration levels than do males (Apostal & Bilden, 1991; Conroy, 1997; Farmer, 1983; McMahon and Patton, 1997; Post et al., 1996; Rojewski, 1995; Sharpe and White, 1993). Other findings indicate that males have higher educational and career aspirations and expectations than do females (Bogie, 1976; Boswell & Katz, 1980; Dick & Rallis, 1991; Lamb, 1993; Marini & Greenberger, 1978; Morrison et al., 1994; Powlette & Young, 1996). Yet, other findings indicate that little or no differences were found (Brown, 1997).

Research finding 24: Gender Differences in the relationship between GED and SVP levels and Academic Achievement.

The relationship between aspirational level as measured by the GED and SVP for aspired-to as well as expected careers and academic achievement was examined for gender differences. A number of important differences were found. The main differences lie in the number of areas in which significant results are found. Generally, the males have greater numbers of significant results with higher correlation coefficients than do the females for aspired-to careers. For example, the total science credits were significant for the males but not the females for both the GED and SVP results. Thus, it can be concluded that there is a relationship between higher academic achievement in science and aspirational levels for aspired-to careers for males but not for females. For expected careers, the results are slightly different. This time the comparison between males and

females is less clear. Both have a number of significant results including total science averages for the GED for expected careers. In fact, the females' correlation coefficient was greater than the males. In addition, for the SVP measure for expected careers, the male correlation coefficient is not significant. Thus, for career expectations it can be concluded that there is a greater relationship between academic achievement and aspirational levels for expected careers for females than for males.

The last section left for discussion is the brief comparison between findings in this study and that of the *Youth Transition into the Labour Market* (YTLM) study by Sharpe and Spain (1991a).

Research finding 25: Career Choice Response.

Career choice response frequencies were compared between these two studies, and little difference was found between the two, with the exception of the no response and the do not know response. All students in this current study listed aspired-to careers, while 5% of the YTLM study did not. Thus, the rural students from this study are very much in line with the general Newfoundland population in terms of listing aspired-to careers.

Research finding 26: Comparison of Industrial Groupings.

Industrial categories were also examined for comparison. The results are quite similar for this comparison as well. Of the top four industrial groupings listed in the current study, three of them were also in the top four for the YTLM study. These were service; natural science, engineering and mathematics; and medicine and health. For the current study the artistic, literary, performing arts and related occupations was the second most frequently aspired-to industrial grouping but was not in the top four of the YTLM study. Conversely, social science and related fields was the fourth most frequently aspired-to industrial grouping for the YTLM but was not in the top four for this study. Another frequently aspired-to industrial grouping for the YTLM study was that of teaching and related occupations, the fifth most aspired-to industrial grouping. For the current study, it was the lowest. These differences are not great therefore, it can be concluded that the aspirations for the rural students in this current study are similar to the Newfoundland population from the YTLM study. Perhaps some of the differences are due to local cultural differences or the change in environments from the past to the present. In terms of the artistic, literary, performing arts and related occupations, which were frequently aspired-to in the current study, the Island locale has a rich tradition of music in the various communities, which may translate into career aspirations. In terms of the differences in frequencies for career aspirations in teaching and related occupations, there is a difference, which

may be because the teaching profession and school environments have changed over the last ten years. This may explain the fact that very few students in the current study aspired to the teaching professions compared to those in the YTLM study.

Research finding 27: Comparison of Student Plans.

The last area of comparison was in terms of the plans for the following year. The results of this comparison lead to some interesting findings. In terms of continuing education, the results are very similar. However, the other categories show marked differences. In terms of intentions to work the following year, far more students in the current study planned for this. This is an interesting finding in light of the high levels of youth unemployment in Newfoundland. One would have expected students to recognize the need for continued education as a means to achieve long-term meaningful employment. Also, far more of the students in the current study planned to return to high school to either finish up their programs or to upgrade marks for entrance into post-secondary programs. While this may be looked at as a positive finding in that more students are recognizing the need to have higher marks for entrance into post-secondary programs, it may also be a negative finding in that more students are taking longer to get through the high school program. Perhaps this is due to the fact that students see the high levels of unemployment and the uncertain future that awaits them and prefer to spend one

more year in the relatively safe confines of the high school system.

The findings and conclusions sections of this paper are complete. Recommendations for educational policy and for further research will conclude this paper.

Recommendations

In this section, recommendations for educational policy and for further research will be made based on the findings and conclusions outlined above. The first set of recommendations that will be discussed is for those interested in educational policy-making. These may include teachers, guidance counselors, school administrators, school board administrators, and policy-makers at the Department of Education.

Recommendation 1.

For rural isolated students aspiring to various careers, it is important that they be exposed to as many different career options as possible. Some ways that this may be achieved are through the use of:

a) Expanded library career information materials which may be presented to students in order for them to increase their knowledge of career opportunities;

b) Field trips to major centers so that students can be exposed to a variety of

occupational activities:

c) Increased internet and distance education resources, so that students may enroll in online course activities or simply use the World Wide Web to seek out specific career information;

d) School visitations by various career reference groups, students can gain valuable first hand career information.

Recommendation 2.

High numbers of students returning for an additional year of high school may be a concern for educational officials. Therefore, an examination of this phenomenon should be undertaken to ascertain the underlying causes and to address the situation.

Recommendation 3.

The negative relationship between academic achievement in nonacademic science courses and career aspirations is an area of concern. Therefore, attempts must be made to try to increase the career aspirations of those students in the nonacademic science courses who tend to do well in these courses. Since there is a positive correlation between career aspirations and expectations, and academic achievement in science courses, all students should be encouraged to enroll in more science courses and to excel in science.

Recommendation 4.

Since many students indicated that interest in courses played a part in choosing particular courses and that course interest is related to career aspirations, students should be encouraged to develop interests in various areas of study. When particular interests are noted students should be directed by teachers and guidance counselors to seek out specific career information in those areas.

Recommendation 5.

Very few students avail of the guidance services already provided by the school, and for those that do there is very little relationship between the receiving of career guidance and aspirational levels for career aspirations or expectations. Therefore, a serious review of the guidance services needs to be conducted in order to discover how best to offer these services to meet the needs of students. Perhaps starting mandatory career guidance sessions at an earlier grade such as the junior high level or to offer a career course at the junior high level would help remedy the situation. In addition, guidance counselors should be inserviced on how to offer up-to-date career information using technologies such as the internet.

Recommendation 6.

Few students indicated that teachers had any influence on educational or career decisions. Therefore, teachers should be provided with inservice training

on how to bring relevant career information into the course offerings. Along these same lines curricula should be adjusted or designed to bring more relevant career information into each course. It should also be mandatory for students to enroll in career education courses, perhaps starting in the junior high and continuing into the early high school.

Recommendation 7.

Since family influence on educational and career planning was minimal, services need to be established by the school which would allow parents or significant others to obtain educational or career information. This would allow them to help the young people in making these educational and career choices.

Recommendation 8.

There appears to be little correlation between computer and internet use and levels of educational and career aspirations and expectations, probably due to the small numbers of individuals who actually used the internet or computers for career information gathering. Therefore, a program of instruction into internet use for the purpose of searching out educational and career information should be implemented. In addition, more students should be encouraged to take computer science courses in school if possible, starting in the elementary or junior high levels.

Recommendation 9.

Some gender differences occurred in terms of types of careers aspired-to and expected, in that males tended to aspire to and expect the more traditional career areas while females were more open to nontraditional areas. Therefore, females should continue to be encouraged to aspire to these various areas while males should have increased exposure to nontraditional areas and to males that are currently employed in these types of careers.

Recommendation 10.

Another area of concern is that more females than males were not listing expected careers and females tended to have high level aspirations but lower level expectations. Therefore, there needs to be an emphasis placed on helping female students seek out career information and to determine appropriate career paths and to encourage females to higher level career expectations.

The next set of recommendations will be for further research.

Recommendation 11.

The information gathered for this research paper deals with one group of students at a particular time in their lives. A greater understanding of the educational and career aspirations and expectations, and of those factors affecting these aspirations and expectations, may be gleaned by the use of a follow-up study

sometime in the future. Therefore, a follow-up study in five years time is recommended.

Recommendation 12.

Gender differences were found in the study, but these differences were not examined in detail. Therefore, further research into these gender differences should be undertaken.

Recommendation 13.

The transition from school to work appears to be a concern in Newfoundland. It is recommended that funding be provided by the government to undertake further research in this area of education and a follow-up study of the *Youth Transition into the Labour Market* study, which was initially conducted by Sharpe and Spain in 1989, be undertaken.

Conclusion

It is hoped that this study has called attention to factors pertaining to aspirations and expectations amongst students from small rural Newfoundland communities. Moreover, it is hoped that the recommendations that have been made will provide some impetus and guidance for changes to educational policy pertaining to these problems.

Although this study examined a great deal of information. there are still many aspects of this problem left unexamined. It is hoped that educational researchers will be encouraged to continue with research into educational and career aspirations and expectations of students from isolated rural areas in order to gain understanding of these complex issues.

References

Anisef, P.I., Paasche, J.G., & Turrittin, A.H. (1980). *Is the Die Cast? Educational Achievement and Work Destinations of Ontario Youth: A Six-Year Follow-Up of the Critical Juncture High School Students*. Toronto: Ministry of Colleges and Universities.

Apostal, R., & Bilden, K. (1991). Educational and occupational aspirations of rural high school students. *Journal of Career Development*, 18 (2), 153-160.

Arnold, J., Budd, R.J., & Miller, K. (1988). Young peoples perceptions of the uses of and usefulness of different sources of careers help. *British Journal of Guidance and Counselling*, 16 (1), 83-89.

Bailey, L.J., & Stadt, R.W. (1973). *Career Education: New Approaches to Human Development*. Bloomington, Illinois: McKnight Publishing Company.

Bates, N. (1999). Personal communications.

Bezilla, R. (1988). *America's Youth 1977-1988*. Princeton, NJ: The Gallup Organization.

Bogie, D.W. (1976). Occupational aspiration-expectation discrepancies among high school seniors. *Vocational Guidance Quarterly*, 24, 250-255.

Boswell, S.L., & Katz, P.A. (1980). *Nice Girls Don't Study Mathematics: Final Report, December 1, 1977, through January 31, 1980*. Boulder, CO: Institute for Research on Social Problems.

Brown, C. (1997). Sex Differences in the career development of urban African American adolescents. *Journal of Career Development*, 23 (4), 295-303.

Brown, D., & Brooks, L. (1996). Introduction to theories of career development and choice: Origins, evolution, and current efforts. In D. Brown and L. Brooks (Eds.), *Career Choices and Development* (pp. 1-33). San Francisco, CA: Jossey-Bass Inc.

Cherry, N., & Gear, R. (1987). Young people's perceptions of their vocational guidance needs: Influences and interventions. *British Journal of Guidance and Counselling*, 15 (2), 169-181.

Cobb, R.A., McIntire, W.G., & Pratt, P.A. (1989). Vocational and educational aspirations of high school students: A problem for rural America. *Research in Rural Education*, 6 (2), 11-16.

Conroy, C.A. (1997). Influences on career choice of rural youth and resulting implications for career development programming: when job awareness and exploration are not enough. *Journal of Vocational Education Research*, 22 (1), 3-19.

Converse, J.M., & Presser, S. (1986). *Survey Questions: Handcrafting the Standardized Questionnaire*. Beverly Hills, CA: Sage publications.

Cowher, S.J. (1994). Rural education initiatives: Preparation for a changing workforce. *Human Services in the Rural Environment*, 18 (2), 18-20.

D'Amico, J.D., Matthes, W., Sankar, A., Merchant, B., & Zurita, M. (1996). Young voices from the rural midwest. *Journal of Research in Rural Education*, 12 (3), 142-149.

Dick, T.P., & Rallis, S.F. (1991). Factors and influences on high school students' career choices. *Journal of Research in Mathematics Education*, 22 (4), 284 -292.

Donahue, M. (1987). Special section: Fogo Island. *Decks Awash*, 16 (14), 2-72.

Doty, C.R. (1994). Improving transition experiences. In A.J. Paultier Jr. (Ed.), *High School to Employment Transition: Contemporary Issues* (pp. 207-223). Ann Arbor, MI.: Prakken Publications.

Duncan, O.D. (1961). A socioeconomic index for all occupations. In A.J. Reiss, Jr., O.D. Duncan, P.K. Hatt, & C.C. North (Eds.), *Occupations and Social Status* (Chap. 6). Glencoe, Il: The free Press.

Dunne, F., Elliott, R., & Carlsen, W.S. (1981). Sex differences in the educational and occupational aspirations of rural youth. *Journal of Vocational Behavior*, 18, 56-66.

Eccles, J.S. (1994). Understanding women's educational choices. *Psychology of Women Quarterly*, 18, 585-609.

Edwards, J.E., Thomas, M.D., Rosenfeld, P., & Booth-Kewely, S. (1997). *How to Conduct Organizational Surveys*, Thousand Oaks, CA: Sage Publications.

Employment and Immigration Canada. (1993). *National Occupational Classification Index of Titles*. (NOC). Ottawa. Canada: Minister of Supply and Services.

Farmer. H.S. (1983). Career and homemaking plans of high school youth. *Journal of Counseling Psychology*. 30 (1). 40-45.

Farmer. H.S.. Wardrop. J.L.. Anderson. M.Z.. & Risinger. R. (1995). *Journal of Counseling Psychology*. 42 (2). 155-170.

Fisher. T.A.. & Griggs. M.B. (1995). Factors that influence the career development of African-American and Latino youth. *Journal of Vocational Education Research*. 20 (2). 57-74.

Genge. E. (1996). *Initial Transition from High School. Decisions and Aspirations of Rural Newfoundland and Labrador Youth*. Master's Thesis. Memorial University of Newfoundland

Ginzberg. E.. Ginsburg. S.. Axelrad. S.. & Herma. J. (1951). *Occupational Choice: An Approach to a General Theory*. New York: Columbia University Press.

Gonzalez. M.P. (1997). Career education needs of secondary school graduates from Asturias. Spain. *Journal of Career Development*. 23 (3). 215-229.

Gottfredson. L.S. (1996). Gottfredson's theory of circumscription and compromise. In D. Brown and L. Brooks (Eds.). *Career Choices and Development* (pp. 179-232). San Francisco. CA: Jossey-Bass Inc.

Hall. A.S.. & Kelly. K.R. (1995). Effects of academic achievement. sex. and community residence on four types of career indecision. *The Journal of Secondary Gifted Education*. 7 (1). 293-302.

Haller. E.J.. & Virkler. S.J. (1993). Another look at rural-nonrural differences in students' educational aspirations. *Journal of Research in Rural Education*. 9 (3). 170-178.

Hektner. J.M. (1995). When moving up implies moving out: Rural adolescent conflict in the transition to adulthood. *Journal of Research in Rural Education*. 11 (1). 3-14.

Helge, D. (1983). *Images: Issues and Trends in Rural Special Education.* Bellingham, WA: American Council on Special Education.

Holland, J.L. (1992). *Making Vocational Choices: A Theory of Vocational Personalities and Work Environments (2nd ed.).* Englewood Cliffs, N.J.: Prentice-Hall Inc.

Kampits, E.I. (1996). Rural partnerships in New England: Learning from kids. *Journal of Research in Rural Education,* 12 (3), 171-177.

Kotrlik, J.W., & Harrison, B.C. (1989). Career decision patterns of high school seniors in Louisiana. *Journal of Vocational Education Research,* 14 (2), 47-65.

Kuvleskey, W., & Bealer, R. (1966). A clarification of the concept of occupational choice. *Rural Sociology,* 1966, 21, 265-276.

Lamb, J. (1993). Gifted girls in a rural community: Making a difference in attitudes toward math. *Rural Special Education Quarterly,* 12 (3), 28-32.

Larson, L.M., Daniels, J.A., Schirger, A., & Freeman, S. (1993). *Predictors of Educational Aspirations Among High School Gifted Students.* Paper presented at the 101st annual convention of the American Psychological Association, Toronto, Aug., 1993.

Lee, C.C. (1984). An investigation of the psychosocial variables in the occupational aspirations and expectations of rural black and white adolescents: Implications for vocational education. *Journal of Research and Development in Education,* 17 (3), 28-34.

Lewko, J.H., Hein, C., Garg, R., & Tesson, G. (1993). Transition of adolescents into science career pathways. In P. Anisef and P. Axelrod (Eds.), *Schooling and Employment in Canada* (pp. 65-87). Toronto, ON: Thompson Educational Publishing.

Ley, J., Nelson, S., & Beltyukova, S. (1996). Congruence of aspirations of rural youth with expectations held by parents and school staff. *Journal of Research in Rural Education,* 12 (3), 133-141.

Looker, E.D. (1993). Interconnected transitions and their costs: Gender and urban/rural differences in the transition to work. In P. Anisef and P. Axelrod (Eds.), *Schooling and Employment in Canada* (pp. 43-64). Toronto, ON: Thompson Educational Publishing.

Luzzo, D.A. (1996). Exploring the relationship between the perception of occupational barriers and career development. *Journal of Career Development*, 22 (4), 239-248.

MacBrayne, P.S. (1987). Educational and occupational aspirations of rural youth: A review of the literature. *Research in Rural Education*, 4 (3), 135-140.

Marini, M.M., & Greenberger, E. (1978). Sex differences in educational aspirations and expectations. *American Educational Research Journal*, 16 (1), 67-79.

Marjoribanks, K. (1986). A longitudinal study of adolescents' aspirations as assessed by Seginer's model. *Merrill-Palmer Quarterly*, 32, 211-229.

Mau, W.C., Domnick, M., & Ellsworth, R.A. (1995). Characteristics of female students who aspire to science and engineering or homemaking occupations. *The Career Development Quarterly*, 43 (4), 323-337.

McDonald, J.L., & Jessell, J.C. (1992). Influence of selected variables on occupational attitudes and perceived occupational abilities of young adolescents. *Journal of Career Development*, 18 (4), 239-250.

McGrath, S.J. (1993). *Post-Secondary Participation in Newfoundland*. Doctoral dissertation, University of Alberta.

McKenna, A.E., & Ferrero, G.W. (1991). Ninth-grade students' attitudes toward nontraditional occupations. *The Career Development Quarterly*, 40 (2), 168-181.

McMahon, M., & Patton, W. (1997). Gender differences in children and adolescents' perceptions of influences on their career development. *The School Counselor*, 44, 368-376.

McNair, D., & Brown, D. (1983). Predicting the occupational aspirations, occupational expectations, and career maturity of black and white male and female 10th graders. *The Vocational Guidance Quarterly*, 32 (1), 29-36.

McWhirter, E.H., Larson, L.M., & Daniels, J.A. (1996). Predictors of educational aspirations among adolescent gifted students of color. *Journal of Career Development*, 23 (2), 97-109.

Minister of Supply and Service Canada. (1990). *Canadian Classification and Dictionary of Occupations*, Ottawa: Canadian Government Publishing Centre.

Mitchell, L.K., & Krumboltz, J.D. (1996). Krumboltz's learning theory of career choice and counseling. In D. Brown and L. Brooks (Eds.), *Career Choices and Development* (pp. 233-280). San Francisco, CA: Jossey-Bass Inc.

Morrison, T.G., Bell, E.M., Morrison, M.A., Murray, C.A., & O'Connor, W. (1994). An examination of adolescents' salary expectations and gender-based occupational stereotyping. *Youth and Society*, 26 (2), 178-193.

Nichols, R.C. (1994). The national longitudinal studies: A window on the school-to-employment transition. In A.J. Paultier Jr. (Ed.), *High School to Employment Transition: Contemporary Issues* (pp. 49-60). Ann Arbor, MI.: Prakken Publications.

Noeth, R.J., Engen, H.B., & Noeth, P.E. (1984). Making career decisions: A self-report of factors that help high school students. *The Vocational Guidance Quarterly*, 32 (2), 240-248.

Norusis, M.J. (1990). *SPSS 6.1: Guide to Data Analysis*, New Jersey: Prentice Hall.

Norusis, M.J. (1993). *SPSS for Windows, Advanced Statistics: Release 6.0*, Chicago: SPSS Inc.

Odell, K.S. (1988). The educational and occupational expectations of rural Ohio tenth- and twelfth-grade students. *Research in Rural Education*, 5 (2), 17-21.

Odell, K.S. (1989). Gender differences in the educational and occupational expectations of rural Ohio youth. *Research in Rural Education*, 5 (3), 37-41.

Owens, T.J. (1992). Where do we go from here?: Post-high school choices for American men. *Youth and Society*, 23 (2), 452-477.

Plata, M. (1981). Occupational aspirations of normal and emotionally disturbed adolescents: A comparative study. *The Vocational Guidance Quarterly*, 30 (2), 131-138.

Post, P., Williams, M., & Brubaker, L. (1996). Career and lifestyle expectations of rural eighth-grade students: A second look. *The Career Development Quarterly*, 44 (3), 250-257.

Powlette, N.M., & Young, D.R. (1996). Career and other factors influencing postsecondary decisions: Survey of high school students in Alberta, Canada. *Journal of Technology Studies*, 22 (2), 30-37.

Prowse, D.W. (1972). *A History of Newfoundland: From the English, Colonial and Foreign Records*. Belleville, ON: Mika Studio.

Quaglia, R. (1989). Student aspirations: A critical dimension in effective schools. *Research in Rural Education*, 6 (2), 7-9.

Quaglia, R.J., & Cobb, C.D. (1996). Toward a theory of student aspirations. *Journal of Research in Rural Education*, 12 (3), 127-132.

Reid, J.N. (1989). The rural economy and rural youth: Challenges for the future. *Research in Rural Education*, 6 (2), 17-23.

Roberts, K. (1997). Prolonged transitions to uncertain destinations: The implications for career guidance. *British Journal of Guidance and Counselling*, 25 (3), 345-360.

Roessler, R.T., & Foshee, K. (1996). Impact of occupational instruction on the performance and vocational identity of special education students. *Rural Special Education Quarterly*, 15 (1), 35-43.

Rojewski, J.W. (1994). Predicting career maturity attitudes in rural economically disadvantaged youth. *Journal of Career Development*, 21 (1), 49-61.

Rojewski, J.W. (1995). Impact of at-risk behavior on the occupational aspirations and expectations of male and female adolescents in rural settings. *Journal of Career Development*, 22 (1), 33-48.

Roseneld, P., Edwards, J.E., & Thomas, M.D. (1995). Surveys (p. 548-549). In N. Nicholson (Ed.), *Blackwell Encyclopedic Dictionary of Organizational Behavior*, Cambridge, MA: Basil Blackwell Publishers.

Sariagiani, P., Wilson, J., Peterson, A., & Vicary, J. (1990). Self-image and educational plans of adolescents from two contrasting communities. *Journal of Early Adolescence*, 10 (1), 37-55.

Sharpe, D.B., & Spain, W.H. (1991a). *The Class of '89: Initial Survey of Level III (Grade 12) High School Students.* St. John's, NF: Memorial University of Newfoundland, Centre for Educational Research and Development.

Sharpe, D.B., & Spain, W.H. (1991b). *Six Months After High School: Class of 89 Follow-Up Survey One.* St. John's, NF: Memorial University of Newfoundland, Centre for Educational Research and Development.

Sharpe, D.B., & Spain, W.H. (1993). *Student Attrition and Retention in the Post-Secondary Education and Training System in Newfoundland and Labrador.* St. John's, NF: Memorial University of Newfoundland, Centre for Educational Research and Development.

Sharpe, D.B., & White, G. (1993). *Educational Pathways and Experiences of Newfoundland Youth.* St. John's, NF: Centre for Educational Research and Development, Memorial University of Newfoundland.

Sheatsley, P.B. (1983). Questionnaire construction and item writing. In P.H. Rossi, J.D. Wright, & A.B. Anderson (Eds.), *Handbook of Survey Research* (pp. 195-230). San Diego, CA: Academic

Smith, T.E. (1991). Agreement of adolescent educational expectations with perceived maternal and paternal educational goals. *Youth and Society*, 23 (2), 155-174.

Spokane, A.R. (1996). Holland's theory. In D. Brown and L. Brooks (Eds.), *Career Choices and Development* (pp. 33-74). San Francisco, CA: Jossey-Bass Inc.

Stern, J.D. (Ed.). (1994). *The Condition of Education in Rural Schools.* Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement, U.S. Government Printing Office.

Stevens, G., & Cho, J.H. (1985). Socioeconomic indexes and the new 1980 census occupational classification scheme. *Social Science Research*, 14, 142-168.

Stevens, K., & Mason, D. (1994). Family and school influences on the vocational choices of students in a rural western Australian community. *The Vocational Aspect of Education*, 46 (3), 273-283.

Stone, J.R., & Wang, Y. (1990). The influence of participation in vocational education on expressed career choice in a related occupation. *Journal of Vocational Education Research*, 15 (1), 41-55.

Super, D.E. (1953). A theory of vocational development. *American Psychologist*, 8, 185-190.

Super, D.E., Savikas, M.L., & Super, C.M. (1996). The life-span, life-space approach to careers. In D. Brown and L. Brooks (Eds.), *Career Choices and Development* (pp. 121-178). San Francisco, CA: Jossey-Bass Inc.

Toepfer, C.F. (1997). Middle level school concerns and rural school-to employment issues: In search of better ways. *Journal of Research in Rural Education*, 13 (1), 28-36.

Trice, A.D., Hughes, M.A., Odom, C., Woods, K., & McClellan, N.C. (1995). The origins of children's career aspirations: Testing hypotheses from four theories. *The Career Development Quarterly*, 43 (4), 307-322.

Trusty, J., Watts, R.E., & Erdman, P. (1997). Predictors of parents' commitment in their teens' career attainment. *Journal of Career Development*, 23 (3), 189-201.

Walberg, H.J. (1989). Student aspirations: National and international perspectives. *Research in Rural Education*, 6 (2), 1-6.

Wallace-Broscious, A., Serafica, F.C., & Osipow, S.H. (1994). Adolescent career development: Relationships to self-concept and identity status. *Journal of Research on Adolescence*, 4 (1), 127-149.

Walsh, J. (1989). Managing the transition from school to work. *Canadian Vocational Journal*, 25 (2), 22-25.

Warton, P.M., & Cooney, G.H. (1997). Information and choice of subjects in the senior school. *British Journal of Guidance and Counselling*, 25 (3), 389-397.

Way, W.L., & Rossmann, M.M. (1996). Family contributions to adolescent readiness for school-to-work transition. *Journal of Vocational Education Research*, 21 (2), 5-36.

West, L.L., & Penkowsky, L.B. (1994). Special problems for rural and urban youth in transition. In A.J. Paultier Jr. (Ed.), *High School to Employment Transition: Contemporary Issues* (pp. 167-174). Ann Arbor, MI.: Prakken Publications.

Wilson, B.P. (1991). *Access to and Success in Programs at Memorial University-An Examination of the Importance of Isolation as a Determinant.* Unpublished doctoral dissertation, University of Toronto, Ont.

Wilson, J., & Fasko, D. (1992). Self-esteem, achievement, and career choices of rural students. *Journal of Humanistic Education and Development*, 30, 131-138.

Wilson, P. M., & Wilson, J.R. (1992). Environmental influences on adolescent educational aspirations: Logistic transformational model. *Youth & Society*, 24 (1), 52-70.

Appendix A

Research Questionnaire

Questionnaire

This questionnaire is part of a research paper carried out by Mr. Craig Tucker as part of his thesis for his Master of Education degree at Memorial University. The reason for this questionnaire is to examine the factors that have influenced the career choices and/or the educational choices that students make towards their future. Please take this survey seriously, take your time and answer the questions thoughtfully. Thank you for your cooperation. **Please note that this is a confidential survey. Mr. Tucker and Dr. Stevens will be using this information for research purposes only.**

General Information

1.Name

2.Age

3.Sex

4.Address/phone number

Student

1) If nothing could get in your way, what would be the perfect job for you?
2) What do you need to do in order to have this perfect job? (ie. training, degrees, etc..)
3) Being realistic, what do you think you will actually be doing for a career?
4) What are you going to do at the end of this school year or the beginning of the next school year? Why?
5) Have you had any job experience? If so, What type(s) of jobs? How much did you make?

Home-family-community

1) Who lives at home with you? (Parents, brothers and sisters etc.)

2) What jobs do your family members do?
   Father
   Mother
   Brothers
   Sisters
   Aunts/Uncles

3) What are the levels of education that each family member has?
   1. Father
   2. Mother
   3. Brothers
   4. Sisters
   5. Aunts/Uncles

4) Have any of your relatives helped you to decide what you are going to do after high school, in terms of either jobs or education? Briefly describe how they helped.

5) Do you have any close relatives living off Fogo Island? If so, who and where?

6) Make a list of the major places you have visited off of Fogo Island.

School

1) When you had course choices to make, what types of things influenced your decision to take one course over another?

2) Have any courses that you have done helped you decide what your future plans will be? If so, briefly explain how.

3) Are you involved in any extra-curricular activities at school? If so, list them. If not, why not?

4) Have you had any information sessions with the guidance counselor concerning your future plans? If so, did you find this helpful? Briefly explain.

5) Have teachers been an influence on your decisions for future career or educational plans? If so, briefly discuss how.

Friends

1) What are most of your friends planning for their future?

2) If you have a boyfriend or girlfriend, if they are in school what grade are they in, if not what are they doing? What are their plans for their future?

1) Are you involved in any activities in your community? If so, list them. Have these activities helped you with deciding your future plans? If so, briefly explain.

2) Are your friends involved in any activities in their communities? Are they the same activities that you are in? List some.

Media-Information Technology

1) Approximately how much television do you watch per day?

2) What types of shows do you watch? List your favorites.

3) Approximately how much radio do you listen to per day?

4) What types of music do you listen to? List your favorites.

5) Have you gained any knowledge or received any information on the T.V. or radio, which has helped you in making plans for your future? If so, briefly explain.

6) Do you use a computer? If so, where do you use it and what do you use it for?

7) Have you used a computer or the internet to obtain information about possible career or educational choices? If so, briefly explain what you found out and how it helped you in planning your future.

Thank you for your time in filling out this questionnaire. If there are any points that you think could be added to get a better picture of how you arrived at a plan for your future, please take a second and write them down. Again, thank you!

Appendix B

Letter of Conscent to School Board

5/10/98

Mr. Randall Mercer, Director
Gander-Lewisporte School District #6

Mr. Mercer;

I am writing this letter to obtain permission from the school board to carry out a survey and interviews of the level III students of Fogo Island Central High. This survey and the follow-up interviews comprise part of my research for my thesis in the Master's program. As the school year is coming to a close and the nature of the research requires level III students towards the end of their high school careers. time is of the essence. Thus. I am respectfully requesting that the approval for this research be as forthcoming as possible. The ethics committee at Memorial University has given approval subject to principal and board written approval. I enclose a copy of my survey for your examination. If possible could you fax a response as soon as possible?

Gratefully Yours,

Craig Tucker

Appendix C

Letter of Consent to Parents

Dear Parent or Guardian:

I am a graduate student in the Faculty of Education at Memorial University of Newfoundland. As part of my thesis research I will be handing out a questionnaire to all level III students in the end of May. The reason for this questionnaire is to examine the factors that have influenced the career choices and/or the educational choices that students make towards their future. I am requesting your permission for your child to take part in this study.

Your child's participation will consist of answering a series of survey questions ranging from their plans for the future to what kinds of television shows they watch. In the second stage of the research some of the students will be interviewed in a one on one situation. This is done to get a deeper understanding of some student's views on the various topics. The survey portion of the study will take approximately 20 minutes to complete and the interview session will take approximately 20 to 30 minutes. The interview session may be taped with each tape being destroyed at the end of the research period.

All information gathered in this study is strictly confidential and at no time will individuals be identified. I am interested in the student's decision making process, not in the performance of any particular individual. Participation is voluntary and you may withdraw your child at any time. This study has received the approval of the Faculty of Education's Ethics Review Committee. The results of my research can be made available to you upon request.

If you are in agreement with having your child participate in this study please sign below and return one copy to the homeroom teacher. The other is for you. If you have any concerns please feel free to contact me at the school or my thesis supervisor, Dr. Ken Stevens at Memorial University, (709) 737 - 4847. For third party contact you can contact Dr. Linda Phillips, Associate Dean of Graduate Studies and Research, Memorial University, (709) 737 - 8587.

Thank you for your cooperation and could you please return this sheet to me before May 25th.

Yours sincerely,

I (parent/guardian) hereby give permission for my child to take part in a study on what factors affect career/educational decision making in level III students being undertaken by Craig Tucker. I understand that participation is voluntary and that my child and/or I can withdraw permission at any time. All information is strictly confidential and no individuals will be identified.

Date:_____ Signature:_____

Appendix D

Explanations of the Levels of General Educational Development (GED) And Specific Vocational Preparation (SVP)

Training Time Requirements*

Training time is a combination of formal school education, informal studies, job experience, and on-the-job or in-plant training required of a worker to obtain the knowledge and skills necessary for average performance in a particular occupation. In the Canadian Classification and Dictionary of Occupations, training time is divided into two areas: General Educational Development (GED), and Specific Vocational Preparation (SVP). These two occupational characteristics, GED and SVP, are measured by numerically coded scales, which are separate, though related to one another.

The training time levels are also used to compare or arrange occupations according to difficulty and complexity, normally in a descending order within each unit group, as determined by the levels of GED and SVP.

The GED Scale takes into account three factors (reasoning, mathematical development and language development) and includes an explanation of the levels for each factor. The scale appears in Section I of this Appendix.

The various methods of acquiring training for SVP and the related scale levels appear in Section II of this Appendix.

Section I - General Educational Development

General Educational Development embraces those aspects of education (formal and informal) which contribute to the worker's (a) reasoning development an ability to follow instructions, and (b) acquisition of "tool" knowledges, such as mathematical an language skills. GED is education of a general nature which does not have a recognized specific, occupational objective. Ordinarily such education is obtained in elementary school, high school, or college; however, it is derived also from experience and self-study.

*Extracted from The Canadian Classification and Dictionary of Occupations (CCDO), pp. 1161-1163.

ESTIMATING THE LEVEL OF GENERAL EDUCATIONAL DEVELOPMENT

The following is a table explaining the various levels of general educational development:

Level	Reasoning Development	Mathematical Development	Language Development
6	Apply principles of logical or scientific thinking to a wide range of intellectual and practical problems. Deal with non-verbal symbolism (formulas, scientific equations, graphs, musical notes, etc.) in its most difficult phases. Deal with a variety of abstract and concrete variables. Apprehend the most abstruse classes of concepts.	Apply knowledge of advanced mathematical and statistical techniques such as differential and integral calculus, factor analysis, and probability determination, or work with a wide variety of theoretical mathematical concepts and make original applications of mathematical procedures, as in empirical and differential equations.	Comprehension and expression of a level to - Report, write, or edit articles for such publications as newspapers, magazines, and technical or scientific journals. Prepare and draw up deeds, leases, wills, mortgages, and contracts. - Prepare and deliver lectures on politics, economics, education, or science. - Interview, counsel, or advise such people as students, clients, or patients, in such matters as welfare eligibility, vocational rehabilitation, mental hygiene or marital relations. - Evaluate engineering technical data to design buildings and bridges.
5	Apply principles of logical or scientific thinking to define problems, collect data, establish facts, and draw valid conclusions. Interpret an extensive variety of technical instructions, in books, manuals, and mathematical or diagrammatic form. Deal with several abstract and concrete variables.		
4	Apply principles of rational systems to solve practical problems and deal with a variety of concrete variables in situations where only limited standardization exists. Examples of "principles of rational systems" are: Bookkeeping, internal combustion engines, electric wiring systems, house building, nursing, farm management, ship sailing. Interpret a variety of instructions furnished in written, oral, diagrammatic, or schedule form.	Perform ordinary arithmetic, algebraic, and geometric procedures in standard, practical applications.	Comprehension and expression of a level to - Transcribe dictation, make appointments for executive and handle his personal mail, interview and screen people wishing to speak to him, and write routine correspondence on own initiative. - Interview job applicants to determine work best suited for their abilities and experience, and contact employers to interest them in services of agency. - Interpret technical manuals as well as drawings and specifications, such as layouts, blueprints, and schematics.
3	Apply common sense understanding to carry out instructions furnished in written, oral, or diagrammatic form. Deal with problems involving several concrete variables in or from standardized situations.	Make arithmetic calculations involving fractions, decimals and percentages.	Comprehension and expression of a level to - File, post, and mail such material as forms, cheques, receipts, and bills. - Copy data from one record to another, fill in report forms, and type all work from rough draft or corrected copy. - Interview members of household to obtain such information as age, occupation, and number of children, to be used as data for surveys, or economic studies. - Guide people on tours through historical or public buildings, describing such features as size, value, and points of interest.
2	Apply common sense understanding to carry out detailed but uninvolved written or oral instructions. Deal with problems involving a few concrete variables in or from standardized situations.	Use arithmetic to add, subtract, multiply , and divide whole numbers.	
1	Apply common sense understanding to carry out simple one- or two-step instructions. Deal with standardized situations with occasional or no variables in or from these situations encountered on the job.	Perform simple addition and subtraction, reading and copying of figures, or counting and recording.	Comprehension and expression of a level to - Learn job duties from oral instructions or demonstration. - Write identifying information, such as name and address of customer, weight, number, or type of product, on tags, or slips. - Request orally, or in writing, such supplies as linen, soap, or work materials.

*Extracted from The Canadian Classification and Dictionary of Occupations (CCDO), pp. 1161-1163.

Section II - Specific Vocational Preparation

Specific vocational preparation is measured by the amount of time needed to acquire the information, techniques, and skills needed for average work performance in a specific occupation. This training may be acquired in a school, work, military, or institutional environment, or through vocationally-oriented hobbies. It does not include orientation training required of a worker to be accustomed to the special conditions of a new job for which he is already fully qualified. Specific vocational preparation includes training given in any of the following forms:

a. University or College Training: Training given by a degree granting institution and for which a degree, diploma, or certificate is issued. the average four-year university or college curriculum (except for liberal arts which is not vocationally oriented) is considered as equivalent to about two years of specific vocational preparation. Each year of university graduate school is regarded as one year of specific vocational preparation.

b. Vocational Training: Training given by a vocational school or non-degree granting college intended to develop general or specific skills, such as commercial, shop, or art training. In evaluating vocational training of this nature, thirty hours of such schooling is regarded as about fifteen hours of specific vocational preparation.

c. Apprenticeship: Training given for an apprenticeable occupation.

d. In-Plant Training: Training given or sponsored by an employer either on or off his own premises, intended as preparation for a specific job in his plant.

e. On-The-Job Training: Any training acquired while serving as a learner or trainee on the job under instruction of a qualified worker, and intended as preparation for a specific job.

f. Experience in Other Jobs: Experience acquired while serving in less responsible jobs, or serving in other jobs, which prepares a worker fora specific job at a higher grade.

Estimating the Level of Specific Vocational Preparation

The following is an explanation of the various levels of specific vocational preparation:

Level	Time
1	Short demonstration only.
2	Anything beyond short demonstration up to and including 30 days.
3	Over 30 days up to and including 3 months.
4	Over 3 months up to and including 6 months.
5	Over 6 months up to and including 1 year.
6	Over 1 year up to and including 2 years.
7	Over 2 years up to and including 4 years.
8	Over 4 years up to and including 10 years.
9	Over 10 years.